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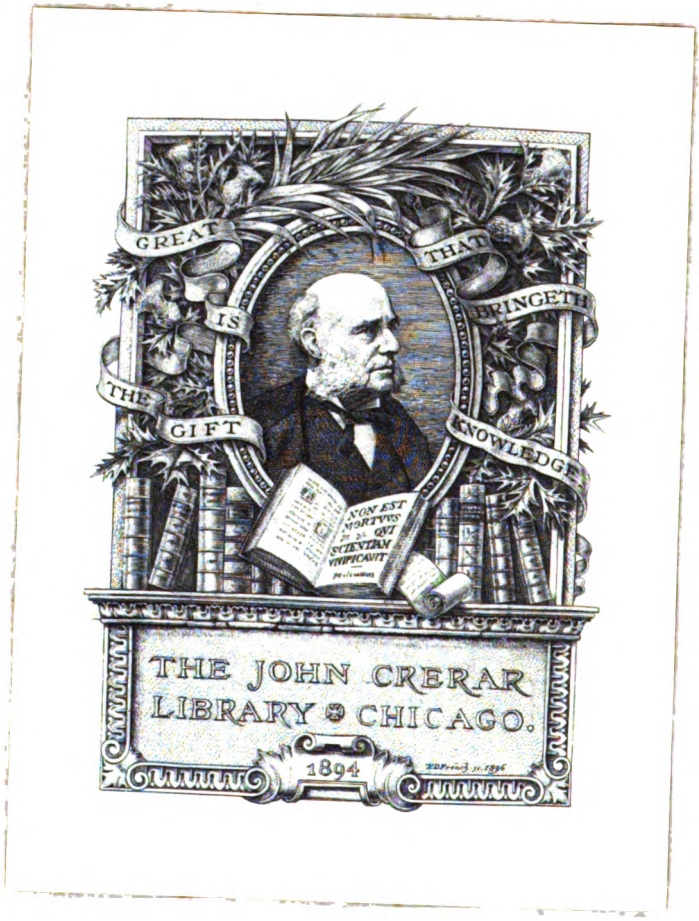
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REPORT

ON THE

HEALTH OF THE ROYAL AIR FORCE

FOR THE YEAR 1920.

VOLUME I.

The following Report on the Health of the Royal Air Force for the Year 1920 is issued for the information of all concerned.

By Command of the Air Council,

W. Nicholson

AIR MINISTRY,
November, 1921.

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AIR MINISTRY,
KINGSWAY,
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To The Secretary of the Air Council.

SIR,

I HAVE the honour to submit the accompanying report on the health of the Royal Air Force during 1920.

At the time of its formation in 1918, the Royal Air Force Medical Administrative Committee adopted a system of statistical returns which, with certain modifications, is still in force. In addition to providing the necessary information as regards disease in general, it was also designed to provide data for research purposes in regard to the medical problems of aviation. Up to that date the whole of the sick of the Royal Air Force, both at home and abroad, were treated in Naval and Military hospitals, and were consequently included in the returns rendered by those Services in accordance with their customary procedure. It was not found practicable to introduce the system for the Royal Air Force in Egypt, Palestine, Mesopotamia and Europe apart from the United Kingdom until the summer of 1919. At the end of that year it was felt that the statistical information available was of sufficient value to allow of a report on the health of the Royal Air Force being undertaken for the year 1920.

Statistics relating to the Royal Air Force in India are, however, omitted owing to the principle of a separate Royal Air Force Medical Service for India only having been approved by the Advisory Council to the Government of India in February 1920. The necessary medical statistical forms could not for various reasons be introduced in India until May 1920, and such statistics as are available from January–May are based on extracts from hospital admission and discharge books only. They are consequently not comparable with the more detailed figures for the last eight months of the year.

The statistics of certain scattered units are incomplete and are consequently also omitted. These include certain detached Flights in the Middle East, drafts on board ship, and the African Aerial Survey Parties, for which it was found impracticable to introduce the approved system of returns. The total average annual strength of these units did not, however, exceed 250.

No cases of sickness of less than 48 hours' duration are shown in the Nosological Table. In the General Tables sickness is shown both including and excluding these 48-hour cases.

The Royal Air Force system of medical administration differs from that of the Army, especially in the development of station sick quarters. These were originally instituted on Royal Naval Air Service stations on similar lines to the sick bay on board H.M. ships. On the formation of the Royal Air Force this

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principle was adopted for all stations. They are organised to provide bed accommodation for 1 per cent. of the station personnel, and facilities for emergency treatment of serious accidents, and cases requiring isolation. They are not intended to accommodate cases requiring prolonged hospital treatment. Members of the Royal Air Force Nursing Service form part of the staff in the larger sick quarters at home. The economical advantages of this system consist in lowered maintenance charges for cases which would otherwise have been admitted to hospital, and in saving of men-hours and transport expenses by retaining cases on the station. This is of particular importance in the Royal Air Force owing to the many highly-skilled tradesmen employed. Illustrations of their value are especially shown in the many cases of sandfly fever and malaria treated entirely in sick quarters at Baghdad and Constantinople respectively in 1920, No. 55 Squadron, which was only at Constantinople during July and August, being able to cope not only with the majority of its sick without evacuation to hospital, but also to proceed to Mesopotamia practically intact.

Except for the Royal Air Force hospitals at Finchley (officers only), Halton and Cranwell, all cases requiring hospital treatment (including all cases of venereal diseases) during 1920 were admitted to Civil or Service hospitals, chiefly Military.

Sickness rates for each individual Royal Air Force unit are not shown separately as, owing to the small strengths of many of them, the figures are of insufficient statistical value for inclusion in the report.

It may be objected that there are no tabulated statistics of sickness affecting flying as opposed to non-flying personnel; but without figures of actual hours flown by each individual such statistics would be uninforming.

It may also be objected that no statistics of "flying sickness" are given. The pathological conditions which have been described as due to flying, and grouped under the term "flying sickness," include "sickness due to high altitude," "exhaustion," "fainting in the air," "vertigo" and "vomiting." The fact is now becoming plain that these conditions, when they occur, are really symptoms of physiological mal-adaptation to altitude, or rotatory motion (on which latter more stress is laid by American than by British investigators). Thus, though these terms occur in invaliding board papers and hospital cards, they are not of themselves causes of admission to hospital or invaliding, and consequently do not form the basis of statistical tables.

Reference is made in Chapter IV. to matters on which research work is being carried out, especially:—

(1) Further elucidation of the nature and value of the so-called "physical efficiency" tests.

As a result of experiments and of examination of successful and unsuccessful pilots, certain physical

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standard tests were devised in order to eliminate as far as possible candidates whose constitutions would be unlikely to stand the test of high altitude flying. These tests have proved of real practical value in assessing physical efficiency; but there is still much about them that is imperfectly understood, and work to be done in standardising them for various climates and altitudes.

(2) The physiology and pathology of high altitude flying, which is still hypothetical in some of its conclusions.

(3) The visual requirements of pilots, and in particular "heterophoria," its nature and effect in the production of bad landings and accidents—the possibility of fixing a standard, candidates falling below which would be rejected—the result of treatment by exercising defective ocular muscles and re-educating cortical centres.

(4) The investigation, in India, of the effects of glare in aggravating visual defects, and again "heterophoria" in particular.

I have the honour to be, Sir,
Your obedient Servant,
M. H. G. FELL,
Air Commodore,
Director of Medical Services.

July 1921.

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CHAPTER I.

HEALTH OF THE ROYAL AIR FORCE AS A WHOLE.

Section I.—General.

Table I. shows details of total sickness in the Royal Air Force during 1920, with the exception of India and other units which have been excluded for reasons already explained in the Introductory Note.

Throughout this Report any totals shown as being in respect of the *total* force will be understood as being exclusive of India and the other units above referred to.

TABLE I.

		Commands.		
		Total Overseas.	Total U.K.	Total Force (excluding India).
Numbers.	Average strength	4,478	21,454	25,932
	Number of fresh cases of sickness :—			
	(*a*) Less than 48 hours	3,507	8,178	11,685
	(*b*) More than 48 hours	4,288	10,021	14,309
	(*c*) Total	7,795	18,199	25,994
	Number of deaths	56	59	115
	Numbers finally invalided out of service.	119	454	573
	Numbers invalided to U.K.	156	—	—
Averages.	Average constantly sick :—			
	(*a*) Including 48 hr. cases	324·4	716·9	1041·3
	(*b*) Excluding 48-hr. cases	310·9	684·2	995·2
	Average duration per case :—			
	(*a*) Including 48-hr. cases	15·2	14·4	14·7
	(*b*) Excluding 48-hr. cases	26·5	25·0	25·5
	Average number of days sickness per individual :—			
	(*a*) Including 48-hr. cases	26·5	12·2	14·7
	(*b*) Excluding 48-hr. cases	25·4	11·7	14·0
Ratios per 1,000 of Strength.	Cases :—			
	(*a*) Including 48-hour cases.	1740·7	848·2	1002·4
	(*b*) Excluding 48-hour cases	957·6	467·0	551·8
	Deaths	12·5	2·8	4·4
	Invalided out of Service	26·6	21·2	22·1
	Constantly sick :—			
	(*a*) Including 48-hour cases.	72·4	33·4	40·2
	(*b*) Excluding 48-hour cases.	69·4	31·9	38·4
	Invalided to U.K.	34·8	—	—

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Chart I. shows monthly case incidence ratios of disease per thousand of strength of the total force, the R.A.F. at home and abroad. The figures for the total force and the United Kingdom correspond closely, owing to the fact that nearly five-sixths of the force were stationed at home, their sickness being consequently the predominating factor.

Table II. (Nosological Table, page 20) shows disease incidence, invalids to the United Kingdom, final invalids, and deaths, in ratios per thousand of strength. Average duration per case and numbers constantly sick are also included. It has been considered preferable to show disease rather by geographical areas abroad than by R.A.F. commands, as the latter may include two countries in which quite different disease factors are at work, *e.g.*, the Middle East Command, which includes Egypt, Palestine, and Mesopotamia.

Venereal disease, affecting, as it does, the Royal Air Force as a whole, is dealt with in the present chapter. The more important preventable diseases, which differ materially in their incidence at home and abroad, are dealt with later. Scabies, impetigo, and what have been termed for the convenience of the Report, "Upper Air Passage Infections," are dealt with in Chapter II. as having caused the principal preventable outbreaks at home. Special reference is made to sandfly fever, dysentery, malaria and heat stroke in Chapter III. The following table shows the frequency of attack among the majority of these diseases:—

TABLE SHOWING THE FREQUENCY OF ATTACK IN CERTAIN DISEASES.

Individuals.	Impetigo.	Scabies.	Upper Air Passage Infections.	Venereal Disease.	Sandfly Fever.	Malaria.
Sick once	555	644	1,534	919	559	248
„ twice	29	65	82	145	121	28
„ three times	1	6	11	18	7	3
„ four times	1	1	—	3	3	2
„ five times	—	1	—	1	—	—
„ eight times	—	—	—	1*	—	—
Total number of individuals	586	717	1,627	1,087	690	281
Total number of cases	620	801	1,731	1,288	834	321
Number of cases arising from every 100 individuals attacked	106	112	106	118	121	114

* Periodical admissions for N.A.B. treatment.

Section II.—Venereal Disease.

For detailed figures, reference should be made to the Nosological Table (Table II., page 22). Chart II. gives the monthly

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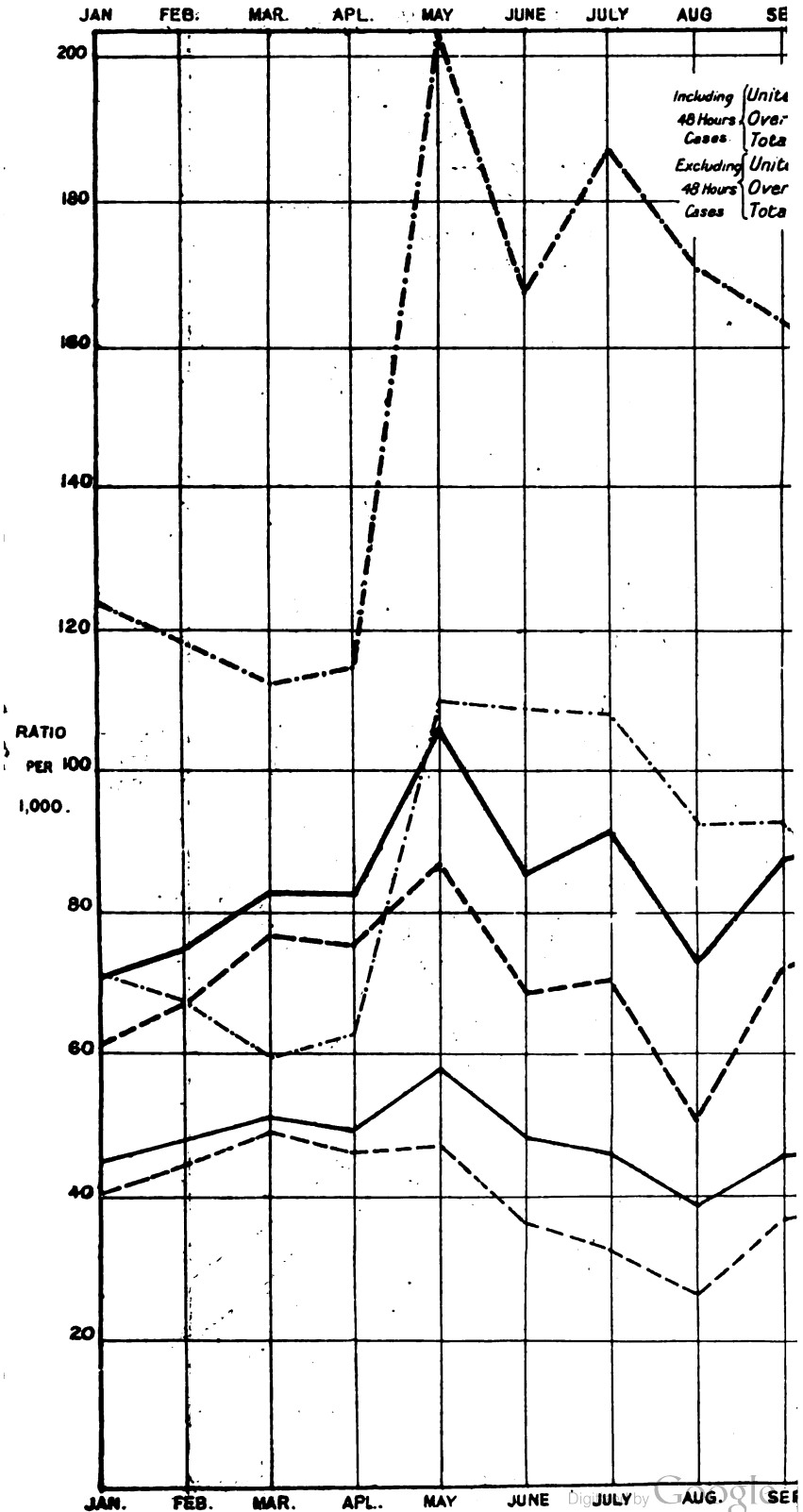
Chart I.

Showing Monthly Case Incidence of Sickness in Ratios per 1,000 total force, overseas & in the United Kingdom during 1920.



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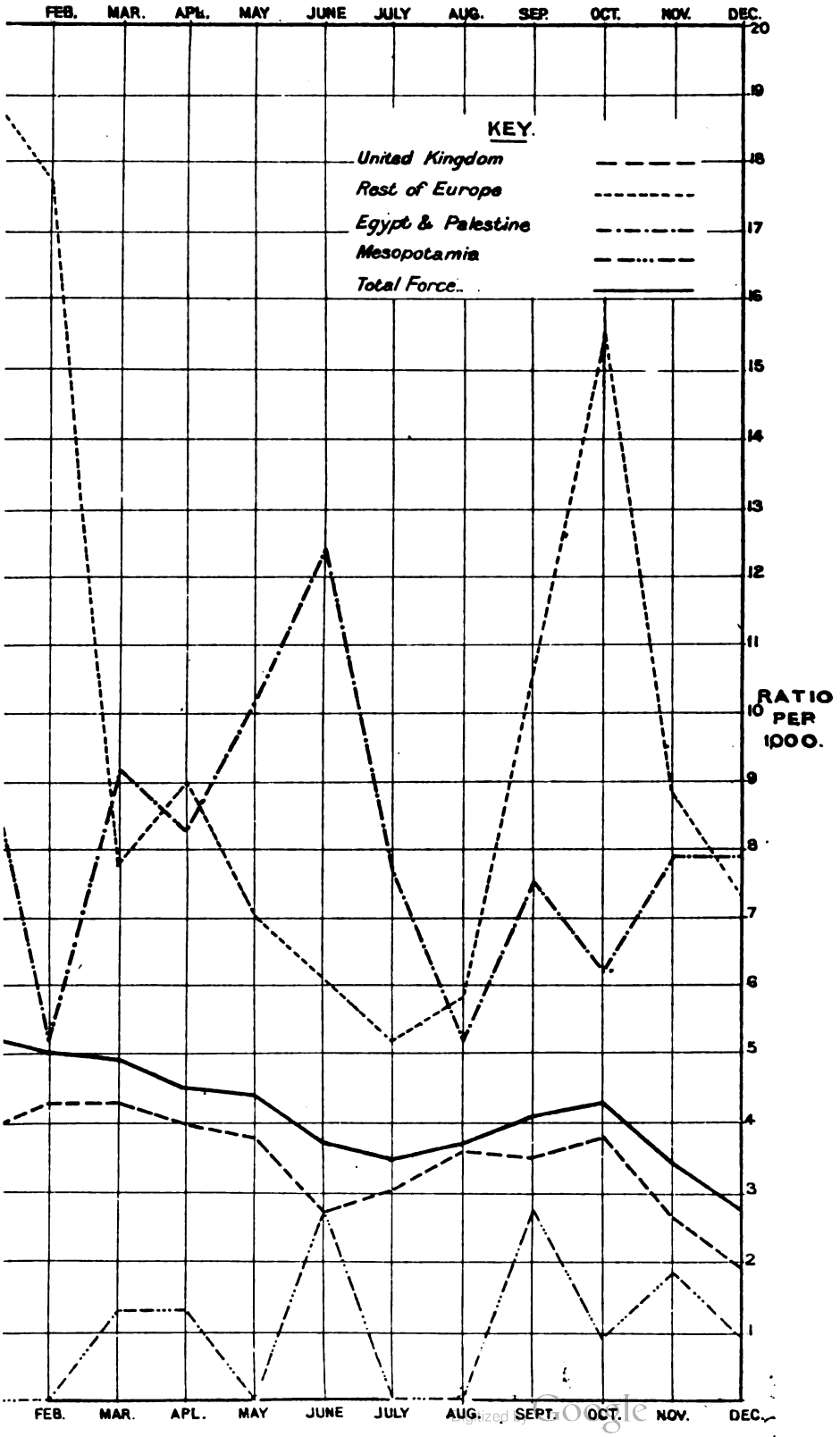
ıg Monthly Case Incidence of Venereal Disease in Ratios per 1000 of Strength
ıe & in Geographical Areas abroad during 1920.



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case incidence ratios per thousand of venereal disease in the total force—United Kingdom and areas overseas. Points of interest are:—

(1) The steady reduction during the year of the venereal figures from 5·3 to 2·7 per thousand per mensem.

(2) The figures for the United Kingdom, representing, as they do, the bulk of the R.A.F., closely follow those for the total force.

(3) In considering the three remaining graphs, the fact that comparatively small strengths are involved must be borne in mind. Thus, a single case of venereal disease in a force whose strength for the month concerned was 1,000 would cause a rise of a whole point on the chart.

(4) The marked fluctuations in the graphs for Egypt, Palestine, and the Rest of Europe—particularly the latter—are due to—

(*a*) the small strengths involved (as explained above);
(*b*) the multiplicity of small units; and
(*c*) the continually altering strengths;

all of which have tended to irregularity of the graph. The majority of cases, indeed, under Rest of Europe occurred among the France and Flanders units, which were demobilised in the early spring; and also among the personnel on the Rhine and in Berlin.

Section III.—Disease and Injury among different Types of Units.

Table III. gives an analysis of sickness under these heads at home, and abroad where the same types of units exist.

Table IV. is a superficial analysis of the comparative case incidence rates. Similar tables could be shown illustrating the same points as regards the other data given in Table III. It will be seen that figures 1–9 are shown in the columns to the left of the double line. These denote order of merit of the respective unit types. Thus airship stations have less disease than other types of units at home, and personnel depôts have the most. To the right of the double line the order of merit numbers run from 1–4 only, as there are four types of units represented at home and abroad. It must not be assumed that the greater proportion of injury shown among squadrons and R.A.F. units on H.M. ships is due to flying *per se;* it is not. There are many other risk factors to be considered, such as propeller accidents, accidents starting cars, and accidents among skilled trades while at work, all of which apply to squadrons, but not necessarily to other units.

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Table III.—Disease and Injury Ratios amongst different Types of Units.

Type of Unit.	Home.							Overseas.							Total.					
	Average Annual Strength.	—	Ratios per 1,000 of Average Annual Strength.				Average Duration per Case.	Average Annual Strength.	Ratios per 1,000 of Average Annual Strength.					Average Duration per Case.	Average Annual Strength.	Ratios per 1,000 of Average Annual Strength.				Average Duration per Case.
			Cases.	Deaths.	Invalided out of Service.	Average constantly Sick.			Cases.	Deaths.	Invalided out of Service.	Invalided to U.K.	Average constantly Sick.			Cases.	Deaths.	Invalided out of Service.	Average constantly Sick.	
Airship Stations - -	758	Disease	265·2	1·3	7·9	21·4	29·4	—	—	—	—	—	—	—	758	265·2	1·3	7·9	21·4	29·4
		Injury	52·8	—	1·3	4·8	32·6		—	—	—	—	—	—		52·8	—	1·3	4·8	32·6
		Total	318·0	1·3	9·2	26·2	29·9		—	—	—	—	—	—		318·0	1·3	9·2	26·2	29·9
Depôts (Personnel) -	2,139	Disease	627·9	6·5	59·4	56·7	33·2	—	—	—	—	—	—	—	2,139	627·9	6·5	59·4	56·7	33·2
		Injury	53·3	—	7·0	7·2	49·6		—	—	—	—	—	—		53·3	—	7·0	7·2	49·6
		Total	681·2	6·5	66·4	63·9	34·4		—	—	—	—	—	—		681·2	6·5	66·4	63·9	34·4
Depôts (Repair) - -	2,376	Disease	406·1	0·4	18·5	23·9	21·6	627	1073·4	3·2	4·8	22·2	59·5	20·3	3,003	545·5	1·0	15·7	31·4	21·1
		Injury	75·8	0·8	1·7	5·1	24·7		154·7	4·8	8·0	12·8	10·8	25·7		92·2	1·6	3·0	6·3	25·1
		Total	481·9	1·3	20·2	29·0	22·1		1228·1	8·0	12·8	35·1	70·4	21·0		637·7	2·7	18·7	37·7	21·6
Depôts (Store) - -	944	Disease	312·5	3·2	23·3	30·4	35·6	792	559·3	2·5	7·6	25·3	50·9	33·3	1,736	425·1	2·9	16·2	39·8	34·2
		Injury	44·5	2·1	2·1	3·5	29·1		71·9	7·6	5·1	2·5	5·8	29·7		57·0	4·6	3·5	4·6	29·4
		Total	357·0	5·3	25·4	33·9	34·8		631·3	10·1	12·6	27·8	56·7	32·9		482·2	7·5	19·6	44·4	33·7

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Experimental and Design Establishments.	825	Disease	326·1	1·2	20·6	23·8	26·7	—	—	—	—	—	—	—	825	326·1	1·2	20·6	23·8	26·7
		Injury	78·8	1·2	1·2	4·0	18·8		—	—	—	—	—	—		78·8	1·2	1·2	4·0	18·8
		Total	404·9	2·4	21·8	27·9	25·2		—	—	—	—	—	—		404·9	2·4	21·8	27·9	25·2
Headquarters, Medical, Demobilisation and other small Units. Records and Pay Offices.	3,034	Disease	323·0	2·3	21·4	26·6	30·2	756	634·9	10·6	80·7	66·1	89·2	51·4	3,790	385·2	4·0	33·2	39·1	37·2
		Injury	54·7	2·0	3·0	5·1	34·0		76·7	1·3	21·2	5·3	15·1	71·9		59·1	1·8	6·6	7·1	43·8
		Total	377·7	4·3	24·4	31·7	30·8		711·6	11·9	101·9	71·4	104·3	53·6		444·3	5·8	39·8	46·2	38·1
Schools, Flying (including Cadet College).	3,180	Disease	402·8	—	14·8	26·4	24·1	—	—	—	—	—	—	—	3,180	402·8	—	14·8	26·4	24·1
		Injury	89·9	1·3	1·3	5·1	20·8		—	—	—	—	—	—		89·9	1·3	1·3	5·1	20·8
		Total	492·7	1·3	16·0	31·5	23·5		—	—	—	—	—	—		492·7	1·3	16·0	31·5	23·5
Schools, Ground - -	5,746	Disease	414·7	1·2	10·3	22·1	19·5	—	—	—	—	—	—	—	5,746	414·7	1·2	10·3	22·1	19 5
		Injury	52·9	0·2	0·3	2·7	18·8		—	—	—	—	—	—		52·9	0·2	0·3	2·7	18·8
		Total	467·6	1·4	10·6	24·8	19·5		—	—	—	—	—	—		467·6	1·4	10·6	24·8	19·5
Squadrons and Ships -	2,452	Disease	346·2	0·8	10·2	20·4	21·6	2,303	940·1	2·2	8·7	20·0	53·3	20·7	4,755	433·9	1·5	9·5	36·3	21·0
		Injury	105·2	2·9	1·6	5·6	17·6		136·7	12·6	1·7	5·2	8·9	23·8		120·5	7·6	1·7	7·2	21·8
		Total	451·4	3·7	11·8	26·0	21·1		1076·8	14·7	10·4	25·2	62·1	21·1		754·4	9·1	11·1	43·5	21·2
TOTALS - - -	21,454	Disease	399·3	1·7	19·2	27·3	25·0	4,478	839·9	3·8	20·1	29·0	59·8	26·1	25,932	475·3	2·0	19·4	32·9	25·3
		Injury	67·8	1·1	2·0	4·6	24·9		117·9	8·7	6·5	5·8	9·6	30·1		76·4	2·4	2·7	5·5	26·2
		Total	467·0	2·8	21·2	31·9	25·0		957·8	12·5	26·6	34·8	69·4	26·5		551·8	4·4	22·1	38·4	25·5

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Table IV.—Analysing Comparative Case Incidence Ratios of Sickness shown on Table III.

Type of Unit.	At Home.				At Home.				Abroad.				Totals.			
	Disease.	Injury.	Total Sickness.	Proportion Disease : Injury.	Disease.	Injury.	Total Sickness.	Proportion Disease : Injury.	Disease	Injury.	Total Sickness.	Proportion Disease : Injury.	Disease.	Injury.	Total Sickness.	Proportion Disease : Injury.
Airship Stations - - - -	1	2	1	5 : 1	—	—	—	—	—	—	—	—	—	—	—	—
Depôts (Personnel) - - -	9	4	9	$11\frac{3}{4}$: 1	—	—	—	—	—	—	—	—	—	—	—	—
Depôts (Repair) - - - -	7	6	7	$5\frac{1}{6}$: 1	4	3	4	$5\frac{1}{4}$: 1	4	4	4	7 : 1	3	3	3	6 : 1
Depôts (Store) - - - -	2	1	2	7 : 1	1	1	1	7 : 1	1	1	1	$7\frac{3}{4}$: 1	2	1	2	$7\frac{1}{2}$: 1
Experimental and Design Establishments.	4	7	4	$4\frac{1}{4}$: 1	—	—	—	—	—	—	—	—	—	—	—	—
Headquarters, Medical, Demobilisation, and other small Units. Record and Pay Offices.	3	5	3	6 : 1	2	2	2	6 : 1	2	2	2	$8\frac{1}{4}$: 1	1	2	1	$6\frac{1}{2}$: 1
Schools, Flying (including Cadet College).	6	8	8	$4\frac{1}{2}$: 1	—	—	—	—	—	—	—	—	—	—	—	—
Schools, Ground - - - -	8	3	6	$7\frac{3}{4}$: 1	—	—	—	—	—	—	—	—	—	—	—	—
Squadrons and Ships - - -	5	9	5	$3\frac{1}{4}$: 1	3	4	3	$3\frac{1}{4}$: 1	3	3	3	7 : 1	4	4	4	$5\frac{1}{4}$: 1

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Section IV.—Disease and Injury among the different Branches and Trades in the Royal Air Force.

Table V. shows the number of cases, final invalids and deaths for the most frequent diseases and injuries occurring during 1920 in ratios per 1,000 of strength in each branch or trade and for the total force—107 cases are included in the figures for the total force which are not shown under the various trades, as no data as to the trades were available.

The nine groups shown are composed as follows:—

1. *Aircraft hands*, including—
   Batmen. Pigeon hands. Police.
2. *Boys.*
3. *Carpenters and Riggers*, including—
   Motor body builders. Boat builders.
   Propeller makers.
4. *Clerks*, including—
   Draughtsmen. Chemists.
   Meteorologists. Cinema operators.
   Photographers. Telephone operators.
   Wireless operators. K.B. Telephonists.
   Schoolmasters.
5. *Drivers*, including—
   Petrol and steam and motor boat drivers. Motor boat crew other than fitters, and excepting engine drivers.
   Motor cyclists. Deckhands.
6. *Fitters*, including—
   Greasers. Winch drivers and fitters.
   Engine drivers (stationary).
7. *Metal Workers*, including—
   Acetylene welders. Armourers and assistants.
   Blacksmiths and stokers. Moulders.
   Camera repairers. Pattern makers.
   Coppersmiths and mates. Sheet metal workers.
   Instrument makers. Tinsmiths.
   Machinists. Turners.
   Sheeters. Dental mechanics.
   Wireless mechanics. Magneto repairers.
   Plumbers.
8. *Officers*, including—
   Cadets. N.C.O. Pilots or Observers.

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TABLE V.—Nosological Table classified by Trades, showing No. of Cases, Invalids and Deaths per 1,000 of Strength in each Branch or Trade and for the Total Force.

Trade Group.	Disease.								Injuries.				Total Diseases and Injuries.
	Upper Air Passages Infections.	Impetigo.	Sandfly Fever.	Scabies.	Venereal Disease.	Digestive System.	Other Diseases.	Total Diseases.	Upper Extremity.	Lower Extremity.	Other Injuries.	Total Injuries.	
1. *Aircraft Hands*:—													
Cases	55·10	17·89	10·38	33·99	61·18	28·98	203·58	410·41	14·67	28·80	15·56	59·03	470·12
Invalids	1·79	—	—	—	0·54	0·72	20·93	22·36	—	0·54	0·36	0·89	23·43
Deaths	—	—	—	—	—	0·18	0·72	0·89	—	—	0·89	0·89	1·79
2. *Boys*:—													
Cases	68·16	80·82	—	32·49	3·57	22·19	175·52	382·73	7·13	18·23	5·94	31·30	414·03
Invalids	—	—	—	—	—	—	9·51	9·51	—	—	—	—	9·51
Deaths	—	—	—	—	—	—	0·40	0·40	—	—	—	—	0·40
3. *Carpenters and Riggers*:—													
Cases	65·73	17·86	53·19	29·26	48·25	31·16	264·44	509·88	19·0	44·45	18·62	82·07	591·95
Invalids	—	—	—	—	—	1·14	13·30	14·44	1·90	0·76	1·52	4·18	18·62
Deaths	—	—	—	—	—	—	1·52	1·52	—	—	0·38	0·38	1·90
4. *Clerks*:—													
Cases	67·11	18·86	31·58	39·02	39·03	3·14	238·15	457·88	7·46	29·82	18·86	56·14	514·02
Invalids	—	—	—	—	—	0·44	12·72	13·16	0·44	1·32	—	1·75	14·91
Deaths	—	—	—	—	—	—	2·18	2·19	—	—	1·75	1·75	3·95
5. *Drivers*:—													
Cases	74·86	20·09	58·43	43·21	70·60	42·60	294·58	604·34	43·82	40·17	30·43	114·42	718·70
Invalids	—	—	—	—	0·61	2·43	19·48	22·52	1·22	0·61	2·43	4·26	26·78
Deaths	—	—	—	—	—	—	3·65	3·65	—	—	1·83	1·83	5·48
6. *Fitters*:—													
Cases	76·82	26·05	51·87	31·52	55·37	31·30	255·20	528·13	29·99	51·52	25·83	107·03	635·16
Invalids	—	—	—	—	—	0·66	10·28	10·94	0·66	1·97	0·88	3·50	14·44
Deaths	—	—	—	—	—	0·22	1·31	1·53	—	—	1·53	1·53	3·06
7. *Metal Workers*:—													
Cases	81·81	21·37	46·90	32·83	48·46	29·18	248·46	509·11	14·67	29·70	15·65	59·41	568·52
Invalids	—	—	—	—	—	2·08	16·68	18·76	1·56	0·52	—	2·08	20·84
Deaths	—	—	—	—	—	—	1·56	1·56	—	—	2·61	2·61	4·17
8. *Officers: Cadets, N.C.O. Pilots and Observers*:—													
Cases	42·30	1·91	19·01	7·24	17·53	31·63	190·93	310·60	11·81	30·87	40·42	83·10	393·70
Invalids	—	—	—	—	0·76	0·76	29·73	31·25	0·38	—	3·05	3·43	34·68
Deaths	—	—	—	—	—	—	4·95	4·95	—	—	12·21	12·21	17·17
9. *Other Skilled Trades*:—													
Cases	81·36	11·16	40·91	33·47	86·94	50·67	334·26	637·38	22·32	47·42	26·96	96·70	734·08
Invalids	—	—	—	—	—	—	26·50	26·50	—	1·39	—	1·39	27·89
Deaths	—	—	—	—	—	0·46	1·86	2·32	—	—	1·39	1·39	3·72
Total Force:—													
Cases	66·74	23·89	3[illegible]·15	30·88	4[illegible]·64	32·30	239·76	475·36	18·68	36·04	21·69	76·39	551·79
Invalids	0·04	—	—	—	0·23	0·81	18·27	19·36	0·69	1·16	0·89	2·74	22·09
Deaths	—	—	—	—	—	0·16	1·89	2·04	—	—	2·39	2·35	4·43

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9. *Other Skilled Trades*, including—

Butchers.	Cooks.
Coach painters.	Drill Instructors.
Compass setters.	Fabric workers.
Dynamo switchboard attendants.	Hydrogen workers.
Electricians.	Mechanics, wireless operator.
Hospital orderlies.	Plasterers.
Instructors.	Power station engineers.
Musicians.	Shoemakers.
Painters and mates.	Storekeepers and storemen.
Shift engineers.	Tailors.
Stokers.	Vulcanisers.
Scaffolders.	Millwrights.
Upholsterers.	
Bricklayers.	

In forming these groups, the underlying principle kept in mind has been :—

(1) To include, as far as possible, in the same group, all occupations exposed to more or less similar conditions.

(2) To avoid any such divergency in the strength of the various groups as would vitiate the value of the comparisons made.

The high proportion of disease as well as injury among skilled trades is noteworthy.

The figures shown for boys are not strictly comparable with the rest, as there were only four boys serving overseas, and both disease and injury rates are very much higher there than at home.

Section V.—Causation of Injury during 1920.

Table VI. gives details of cases, invalids, and deaths resulting from the principal causes of injury during the year.

(1) *Flying Accidents.*

Of the 71 cases shown, 39 occurred in the United Kingdom and 32 overseas, resulting in 14 deaths at home and 15 overseas. Ten out of the 11 cases of invaliding were due to flying accidents prior to 1920. Fifty-six of the 71 cases occurred in the Officer Group (No. 8), of which 33 were at home and 23 overseas, resulting in 12 deaths in each case. There was only one accident among cadets, which was not of a serious nature; and a single death occurred amongst N.C.O. observers.

The case incidence among officers and cadets was 21·0 per 1,000 of strength, and the death rate 8·5. Of the remaining 15 cases, 9 occurred among the Fitter Trade Group, resulting in 3 deaths, representing a case incidence and death rate of 2·0 and 0·7 per 1,000 of strength. The remaining six occurred

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among the Carpenter and Rigger Group (3, with one death), Aircraft Hands (2), and the Metal Worker Group (1). The case incidence and death rate for the total force were 2·7 and 1·1 per 1,000.

Owing to the shortage of clerical labour, the full returns of machine hours flown by units are not available for 1920. Assuming that the average mileage per hour's flying for a Service machine is 95, the figures for the last seven months of 1920 in the United Kingdom show that for one fatal accident more than 300,000 miles were flown by Service pilots.

The average duration per case was 63·1 days. This figure is high, owing to many cases which occurred in 1919 still remaining in hospital in 1920.

(2) *Propeller Accidents.*

Accidents occurring whilst swinging propellers on starting aeroplanes were 25 in number, 18 of which occurred at home. Of the total, 15 occurred in the Fitter Trade Group, representing a case incidence ratio of 3·3 per 1,000 of strength; 5 occurred among the Carpenter and Rigger Group (1·9 per 1,000 of strength); 2 among aircraft hands (0·4 per 1,000 of strength). Four cases were finally invalided. The average duration per case was 44·9 days.

(3) *Accidents Starting Motors.*

Of the 102 cases occurring, there were 59 cases of fracture of the lower third of the Radius, and 8 cases of sprained wrist. Five cases were finally invalided. Two of the 36 cases in the Fitter Group were invalided, the case incidence per 1,000 of strength being 7·9. Among drivers there were also 36 cases, representing a case incidence ratio of 21·9 per 1,000. There were no deaths.

The majority of the remaining accidents occurred among aircraft hands (10), Officer Group (5), other skilled trades (5). The average duration per case was 36 days.

The seasonal incidence is interesting, as from April to September there were 32 cases as compared with 70 in the colder months of the year. At home the figures were 55 in the cold months compared with 23 in the warm ones, and overseas 15 compared with 9.

Factors are possibly—

(*a*) increased difficulty in turning the engine over in winter owing to the increased viscosity of the oil;

(*b*) coldness of hands, resulting in muscular in-co-ordination;

(*c*) the habit of priming in the winter to secure easy starting.

The majority of these accidents can be regarded as preventable as they are usually due to holding the starting handle with the thumb opposed to the fingers, or advancing the magneto too far.

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(4) *Motor Accidents other than those caused in starting Motors.*

Of the 138 cases, 68 were motor cycle accidents. Of the remainder, the majority were caused by accidents with lorries and tenders. Falls from lorries were the most frequent, and were mainly due either to the tailboard coming loose *en route* or to men sitting on the sides or tailboard. There were 6 cases of the same nature in tenders.

The two cases of drowning shown in Table VI. under this head were due to a lorry overturning and pinning down two men in a ditch on the roadside in Egypt.

(5) *Other Accidents on Duty.*

Two hundred and eighty-seven of the 394 cases occurred at home. The case incidence and death rate was 15·2 and 0·4 per 1,000 respectively for the total force. The average duration per case was 24·2 days.

The number of cases, invalids and deaths and equivalent ratios per thousand of trade group strength are shown in the following table:—

Branch or Trade Group.	United Kingdom.			Overseas.			Total.			Ratios of total accidents per 1,000 of strength.		
	Cases.	Invalids.	Deaths.	Cases.	Invalids	Deaths.	Cases.	Invalids.	Deaths.	Cases.	Invalids.	Deaths.
Aircraft hands -	59	—	—	13	1	1	72	1	1	12·9	0·2	0·2
Boys - - -	14	—	—	—	—	—	14	—	—	5·5	—	—
Carpenters and Riggers - -	37	—	—	17	4	—	54	4	—	20·5	1·5	—
Clerks - - -	12	—	—	5	—	—	17	—	—	7·0	—	—
Drivers - - -	24	—	—	16	—	—	40	—	—	24·3	—	—
Fitters - - -	67	4	1	30	1	2	97	5	3	21·2	1·1	0·7
Metal Workers -	20	—	1	9	—	1	29	—	2	15·1	—	1·0
Officers and Cadets -	11	—	—	4	—	3	15	—	3	5·7	—	1·1
Other Skilled Trades	41	—	—	12	—	—	53	—	—	24·6	—	—
Unstated - -	2	1	—	1	—	—	3	1	—	—	—	—
Total - -	287	5	2	107	6	7	394	11	9	15·2	0·4	0·4

(6) *Accidents due to Athletics.*

The 2 deaths shown were caused by drowning while bathing in the Tigris at Baghdad. 385 out of the total of 540 accidents were due to football. Of the balance, athletic sports and previous training for them accounted for 49, boxing 31, bathing 17 (mostly cuts on the feet), cricket and physical training 15 each, gymnastics 13; the remaining 15 being due to other causes, such as hockey, tennis, roller-skating, &c. The average duration per case was 16·8 days.

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TABLE VI.—NOSOLOGICAL TABLE OF PRINCIPAL CAUSES OF INJURY DURING 1920.

Injury.	Flying Accidents on Duty (excluding Propeller Accidents).			Propeller Accidents.			Motor Accidents in Service (excepting due to Starting).			Starting-Motor Accidents.			Other Accidents on Duty.			Accidents occurring during Athletics.			TOTAL.		
	Cases.	Invalids.	Deaths.	Cases.	Invalids.	Deaths.	Cases.	Invalids.	Deaths.	Cases.	Invalids.	Deaths.	Cases.	Invalids.	Deaths.	Cases.	Invalids.	Deaths.	Cases.	Invalids.	Deaths.
General Injuries.																					
Burns and Scalds	3	—	3	—	—	—	2	1	—	—	—	—	11	1	1	—	—	—	16	2	4
Drowning	6	—	5	—	—	—	2	—	2	—	—	—	1	—	1	2	—	2	11	—	10
Multiple Fractures	17	7	15	1	1	—	3	—	2	—	—	—	1	—	1	—	—	—	22	8	18
Starvation	—	—	—	—	—	—	—	—	—	—	—	—	2	—	2	—	—	—	2	—	2
Other Injuries	11	—	—	3	—	—	22	1	—	1	—	—	7	1	2	1	—	—	45	2	2
Head.																					
Contusion, Scalp	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2	—	—	2	—	—
Wound, Scalp	4	—	—	1	—	—	4	—	—	1	—	—	5	—	—	2	—	—	17	—	—
Fracture, Skull	5	—	5	—	—	—	6	—	5	—	—	—	3	—	1	—	—	—	14	—	11
Other Injuries	1	—	—	2	—	—	9	—	—	—	—	—	3	—	—	10	—	—	25	—	—
Face and Mouth, Eye and Ear.																					
All	12	2	—	2	—	—	11	—	—	3	—	—	34	1	—	19	—	—	81	3	—
Chest.																					
Fracture, Rib	1	—	—	—	—	—	4	—	1	—	—	—	1	—	—	8	—	—	14	—	1
Other Injuries	—	—	—	—	—	—	1	—	—	—	—	—	2	—	1	4	—	—	7	—	1
Back.																					
Contusion, Wound, or Sprain	—	—	—	1	—	—	2	—	—	—	—	—	10	—	—	20	—	—	33	—	—
Other Injuries	1	—	1	—	—	—	—	—	—	—	—	—	1	1	—	—	—	—	2	1	1
Abdomen.																					
All	—	—	—	—	—	—	1	1	—	—	—	—	4	—	—	7	—	—	12	1	—
Pelvis and Organs of Generation.																					
All	1	—	—	—	—	—	1	—	—	—	—	—	6	—	—	9	—	—	17	—	—
Upper Extremity.																					
Sprains	—	—	—	—	—	—	3	—	—	9	—	—	4	—	—	12	—	—	28	—	—
Factures	1	1	—	6	2	—	7	1	—	69	4	—	15	—	—	37	—	—	135	8	—
Dislocations	—	—	—	1	—	—	4	—	—	2	—	—	4	—	—	6	—	—	17	—	—
Abrasion, Contusion, Wound or Burn of Hand and Wrist.	—	—	—	1	—	—	5	1	—	5	1	—	104	1	—	4	—	—	119	3	—
Abrasion, Contusion, Wound or Burn of Rest of Limb.	1	—	—	2	—	—	7	—	—	6	—	—	24	2	—	8	—	—	48	2	—
Other Injuries	1	—	—	—	—	—	3	—	—	1	—	—	6	—	—	24	—	—	35	—	—
Lower Extremity.																					
Sprain, Ankle	—	—	—	—	—	—	2	—	—	1	—	—	36	—	—	89	—	—	128	—	—
Sprain and Synovitis Knee	—	1	—	1	—	—	8	—	—	—	—	—	28	—	—	149	3	—	186	4	—
Sprains, Other	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	1	—	—	2	—	—
Fractures	4	—	—	2	1	—	7	7	—	2	—	—	16	2	—	19	1	—	50	11	—
Dislocations	1	—	—	—	—	—	1	—	—	—	—	—	1	—	—	1	—	—	4	—	—
Abrasion, Contusion, Wound and Burn of Foot and Ankle.	—	—	—	—	—	—	8	1	—	2	—	—	36	—	—	38	—	—	84	1	—
Abrasion, Contusion, Wound and Burn of Rest of Limb.	—	—	—	2	—	—	13	1	—	—	—	—	26	2	—	50	—	—	91	3	—
Other Injuries	1	—	—	—	—	—	2	—	—	—	—	—	2	—	—	18	—	—	23	—	—
TOTAL	71	11	29	25	4	—	138	14	10	102	5	—	394	11	9	540	4	2	1,270	49	50

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(7) *Other Accidents* not shown in Table VI. include:—

(*a*) Accidents off duty.

There were 241 reported, of which 217 occurred at home. There were 2 cases of final invaliding, and no deaths. The case incidence ratio per 1,000 of the total force was 9·3, and the average duration per case 18·4 days.

(*b*) Accidents on leave numbered 30 with no resultant invalidings or deaths. The average duration per case was 34·4 days.

(*c*) Injuries to feet, mainly septic blisters and abrasions, caused by pressure of boots, accounted for 64 cases with an average duration of 8·8 days.

(*d*) There were 7 cases of suicide, 5 of which occurred at home and 2 abroad.

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TABLE II.—Nosological Table showing

Disease.	United Kingdom.					Rest of Europe.						
	Ratios Per 1,000 of Average Annual Strength.			Averages.		Ratios Per 1,000 of Average Annual Strength.				Averages.		
	Cases.	Deaths.	Invalids.	Constantly Sick.	Duration of Case.	Cases.	Deaths.	Invalided to U.K.	Finally Invalided.	Constantly Sick.	Duration of Case.	
Communicable Diseases.												
Cerebro spinal fever	0·05	0·05	—	0·1	4·0	—	—	—	—	—	—	1
Chicken pox	0·19	—	—	0·2	2o·0	—	—	—	—	—	—	2
Diphtheria	1·40	0·05	—	2·3	28·0	1·74	—	—	—	0·3	50·0	3
Dysentery, clinical	0·14	0·05	—	0·4	50·0	—	—	—	—	0·0	—	4
„ bacillary	—	—	—	—	—	1·74	—	—	—	0·2	30·0	5
„ protozoal	0·47	—	0·09	1·3	45·8	1·74	—	—	—	0·4	69·0	6
Encephalitis lethargica	0·05	0·05	—	0·3	106·0	—	—	—	—	—	—	7
Enteric fever	—	—	—	—	—	—	—	—	—	—	—	8
Enteritis, acute (including gastro-enteritis, acute)	3·36	0·05	—	1·9	9·5	31·40	—	—	—	0·8	8·3	9
Erysipelas	0·19	—	—	0·5	42·0	—	—	—	—	—	—	10
Impetigo contagiosa	27·22	—	—	32·4	20·3	4·36	—	0·87	—	0·3	21·6	11
Influenza (including influenzal pneumonia)	12·68	—	—	14·7	19·8	22·67	1·74	—	—	1·1	16·0	12
Leishmaniasis, tropical sore	—	—	—	—	—	—	—	—	—	—	—	13
Malaria.												
Clinical, primary	—	—	—	—	—	—	—	—	—	—	—	14
„ recurrent	1·72	—	—	1·9	19·2	6·10	—	—	—	0·2	10·7	15
Benign tertian, primary	—	—	—	—	—	—	—	—	—	—	—	16
„ „ recurrent	2·05	—	0·05	3·6	29·8	0·87	—	—	—	0·0	9·0	17
Malignant, primary	—	—	—	—	—	—	—	—	—	—	—	18
„ recurrent	0·47	—	—	0·8	28·9	0·87	—	—	—	0·3	104·0	19
TOTAL—Malaria	**4·24**	—	**0·05**	**6·3**	**25·4**	**7·85**	—	—	—	**0·5**	**20·9**	
Measles	0·61	0·05	—	0·8	21·0	0·87	—	—	—	0·1	19·0	20
Mediterranean fever	—	—	—	—	—	1·74	—	—	—	0·4	76·5	21
Mumps	0·79	—	—	1·0	22·0	—	—	—	—	—	—	22
Paratyphoid, "A"	0·05	—	—	0·3	108·0	—	—	—	—	—	—	23
„ "B"	—	—	—	—	—	—	—	—	—	—	—	24
Pneumonia, lobar	1·68	0·09	—	4·3	43·4	2·62	—	—	—	0·9	104·7	25
Polio-myelitis, acute	0·05	—	0·09	0·8	301·0	—	—	—	—	—	—	26
Pyrexia of unknown origin	8·20	—	—	3·7	7·6	23·54	—	—	—	0·9	11·7	27
Relapsing fever	—	—	—	—	—	—	—	—	—	—	—	28
Rheumatism, acute	0·56	0·05	0·37	3·9	119·2	1·74	—	0·87	—	1·0	18·5	29
Rubella	0·84	—	—	0·8	17·0	0·87	—	—	—	0·1	28·0	30
Sandfly fever	—	—	—	—	—	98·52	—	—	—	1·7	5·5	31
Scabies	32·16	—	—	23·2	12·3	46·21	—	0·87	—	1·7	11·4	32
Scarlet fever	0·79	0·05	—	2·1	45·4	2·62	—	—	—	0·4	43·3	33
Smallpox	—	—	—	—	—	—	—	—	—	—	—	34
Tetanus	0·05	0·05	—	0·1	2·0	—	—	—	—	—	—	35
Trench fever	0·05	—	0·05	0·3	118·0	—	—	—	—	—	—	36
Tuberculosis.												
Bones	0·19	—	0·28	3·7	337·8	—	—	—	—	—	—	
Cerebral	0·05	0·05	—	0·0	7·0	—	—	—	—	—	—	
Generative and urinary organs	0·23	0·05	—	0·8	55·0	—	—	—	0·87	0·1	—	
Glandular	0·37	—	0·09	0·8	38·6	—	—	—	0·87	0·1	—	
Joints	0·09	0·05	0·05	0·6	114·0	—	—	—	—	—	—	
Miliary	—	—	—	—	—	—	—	—	—	—	—	

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Sickness under Geographical Areas.

	Egypt—Palestine "Q" and "Z" Forces.						Mesopotamia.						Total.				
	Ratios Per 1,000 of Average Annual Strength.				Averages.		Ratios Per 1,000 of Average Annual Strength.				Averages.		Ratios Per 1,000 of Average Annual Strength.			Averages.	
	Cases.	Deaths.	Invalided to U.K.	Finally Invalided.	Constantly Sick.	Duration of Case.	Cases.	Deaths.	Invalided to U.K.	Finally Invalided.	Constantly Sick.	Duration of Case.	Cases.	Deaths.	Invalided.	Constantly Sick.	Duration of Case.
1	—	—	—	—	—	—	—	—	—	—	—	—	0·04	0·04	—	0·0	4·0
2	—	—	—	—	—	—	—	—	—	—	—	—	0·16	—	—	0·2	20·0
3	4·87	—	—	—	1·2	35·4	3·46	—	—	—	0·2	30·0	1·81	0·04	—	4·0	31·0
4	11·77	—	—	—	2·0	25·1	5·76	—	—	—	0·3	22·4	1·43	0·04	—	2·7	27·0
5	15·08	0·41	—	—	4·7	46·4	5·76	—	1·15	—	0·5	39·8	1·69	0·04	—	5·4	44·8
6	6·20	0·41	1·22	0·41	3·8	86·6	12·67	1·15	1·15	—	2·2	76·7	1·50	0·08	0·12	7·7	72·5
7	—	—	—	—	—	—	—	—	—	—	—	—	0·04	—	0·04	0·3	106·0
9	0·41	—	—	—	0·5	200·0	4·61	—	1·15	—	0·6	55·2	0·19	—	—	1·2	84·2
9	39·68	—	—	—	3·5	8·7	64·52	1·15	—	—	1·7	11·2	11·99	0·08	—	7·9	9·3
10	0·41	—	—	—	0·1	19·0	1·15	—	—	—	0·0	10·0	0·23	—	—	0·5	32·8
11	10·56	—	—	—	0·9	12·8	5·76	—	—	—	0·3	22·6	23·90	—	—	33·9	20·2
12	18·65	0·41	—	—	1·8	15·8	102·54	—	—	—	2·4	9·8	16·50	0·12	—	20·0	17·1
13	—	—	—	—	—	—	5·76	—	—	—	0·8	57·2	0·19	—	—	0·8	57·2
14	15·89	—	—	—	1·8	13·4	10·37	—	—	—	0·2	9·7	2·24	—	—	2·0	12·8
15	13·93	—	—	—	2·1	19·5	23·04	1·15	1·15	—	1·5	27·0	3·97	0·04	—	5·8	20·6
16	10·15	—	—	—	1·7	25·4	16·13	—	—	—	1·0	27·3	1·50	—	—	2·8	26·1
17	10·96	0·41	0·81	—	2·6	34·7	13·83	—	—	—	1·0	31·1	3·24	0·04	0·04	7·2	31·3
18	3·25	—	0·41	—	1·0	46·6	5·76	—	2·30	—	1·2	85·6	0·50	—	—	2·2	61·6
19	1·22	—	0·41	—	0·9	115·3	11·52	—	—	—	0·6	21·9	0·93	—	—	2·6	39·9
	61·31	0·41	1·62	—	10·1	24·6	80·65	1·15	3·46	—	5·6	29·0	12·37	0·08	0·04	22·6	25·8
20	—	—	—	—	0·1	—	2·30	—	—	—	0·1	17·0	0·62	0·04	—	1·0	22·2
21	—	—	—	—	0·5	—	—	—	—	—	—	—	0·08	—	—	0·9	160·5
22	—	—	—	—	—	—	1·15	—	—	—	0·1	20·0	0·69	—	—	1·1	21·8
23	—	—	—	—	—	—	—	—	—	—	—	—	0·04	—	—	0·3	108·0
24	—	—	—	—	0·2	—	—	—	—	—	—	—	—	—	—	0·2	—
25	2·03	—	—	—	0·9	66·4	1·15	—	—	—	0·1	46·0	1·73	0·08	—	6·2	50·1
26	—	—	—	—	—	—	—	—	—	—	—	—	0·04	—	0·08	0·8	301·0
27	47·10	0·41	—	—	3·1	9·8	5·76	—	—	—	0·2	11·0	12·49	0·04	—	7·8	8·8
28	0·41	—	—	—	0·2	56·0	—	—	—	—	—	—	0·04	—	—	0·2	56·0
29	0·81	—	—	—	0·1	27·0	1·15	—	—	—	0·6	202·0	0·66	0·04	0·31	5·6	120·5
30	0·41	—	—	—	0·0	17·0	—	—	—	—	—	—	0·77	—	—	1·0	17·6
31	31·26	—	—	—	2·1	10·1	742·00	—	—	—	15·1	8·6	32·15	—	—	18·9	8·3
32	13·09	—	—	—	1·7	13·0	10·37	—	—	—	0·4	14·9	30·88	—	—	27·0	12·3
33	—	—	—	—	—	—	1·15	—	—	—	0·1	32·0	0·81	0·04	—	2·6	44·4
34	—	—	—	—	0·1	—	—	—	—	—	—	—	—	—	—	0·1	—
35	—	—	—	—	—	—	—	—	—	—	—	—	0·04	0·04	—	0·0	2·0
	—	—	—	—	—	—	—	—	—	—	—	—	0·04	—	0·04	0·3	118·0
36	1·22	0·41	0·41	0·41	1·4	174·7	—	—	—	—	—	—	0·27	0·04	0·27	5·1	267·9
37	—	—	—	—	—	—	—	—	—	—	—	—	0·04	0·04	—	0·0	7·0
38	—	—	—	—	—	—	—	—	—	—	—	—	0·19	0·04	0·04	0·8	59·4
39	—	—	—	—	—	—	—	—	—	—	—	—	0·31	—	0·12	1·0	45·1
40	—	—	—	—	—	—	—	—	—	—	—	—	0·08	0·04	0·04	0·6	114·0
	—	—	—	—	—	—	1·15	—	—	—	0·1	53·0	0·04	—	—	0·1	53·0

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TABLE II.—Nosological Table showing

Disease.	United Kingdom. Ratios per 1,000 of Average Annual Strength. Cases.	Deaths.	Invalids.	Averages. Constantly Sick.	Duration of Case.	Rest of Europe. Ratios per 1,000 of Average Annual Strength. Cases.	Deaths.	Invalided to U.K.	Finally Invalided.	Averages. Constantly Sick.	Duration of Case.	
Tuberculosis—continued.												
Peritoneum and intestines	0·05	0·05	0·09	0·6	218·0	0·87	—	—	1·74	0·2	7·40	1
Respiratory	3·03	0·28	3·03	13·2	74·	3·49	—	0·87	3·49	0·6	54·5	2
Skin	—	-	—	1·0	—	—	—	—	--	—	—	3
TOTAL—Tuberculosis	**4·01**	**0·47**	**3·54**	**20·7**	**8·92**	**4·36**	**—**	**0·87**	**6·97**	**1·0**	**73·2**	
Upper Air Passage Infections.												
Inflammation of fauces	3·26	—	—	1·7	9·0	1·74	—	—	—	0·0	4·0	4
Laryngitis	3·54	—	0·05	2·9	14·1	4·36	—	—	—	0·1	9·4	5
Naso pharyngitis	8·02	--	—	3·1	6·6	—	—	—	—	—	—	6
Peritonsillar abscess	0·89	—	—	0·6	12·6	6·10	—	—	—	0·3	16·3	7
Pharyngitis	12·49	—	—	5·8	8·0	1·74	—	—	—	0·0	5·5	8
Rhinitis, acute catarrhal	7·88	—	—	4·1	8·9	3·49	—	—	—	0·1	13·5	9
Tonsillitis	27·92	—	—	18·4	11·2	45·34	—	0·87	—	1·8	12·9	10
Vincent's angina	0·56	—	—	0·7	21·2	—	—	—	—	—	—	11
TOTAL—Upper air passage infections	**64·56**	**—**	**0·05**	**37·4**	**9·9**	**62·78**	**—**	**0·87**	**—**	**2·5**	**12·6**	
Vaccinia	6·11	—	—	3·8	10·7	1·74	—	—	—	0·1	26·5	12
Venereal Diseases.												
Gonorrhœa, acute	18·46	—	—	76·1	70·4	76·72	—	26·15	—	19·8	82·4	13
,, , relapse	4·33	—	—	10·5	41·3	13·08	—	—	—	2·2	53·9	14
,, , gleet	1·72	—	—	5·3	52·6	3·49	—	0·87	—	0·7	60·3	15
,, , other complications	1·77	—	—	4·9	47·4	1·74	—	0·87	—	0·6	103·0	16
Syphilis, primary	8·06	—	—	27·1	57·3	15·69	—	4·36	0·87	3·3	68·0	17
,, , secondary	3·17	—	—	10·1	54·6	4·36	—	1·74	—	1·3	96·0	18
,, , tertiary	1·03	—	0·14	3·2	52·6	0·87	—	—	—	0·2	81·0	19
,, , congenital	0·23	—	0·09	1·2	87·2	—	—	—	—	—	—	20
Soft chancre	2·56	—	—	5·3	35·6	14·82	—	0·87	—	2·3	49·0	21
TOTAL—Venereal disease	**41·33**	**—**	**0·23**	**143·8**	**59·3**	**130·77**	**—**	**34·87**	**0·87**	**30·4**	**74·2**	
Whooping cough	0·05	—	—	0·1	28·0	—	—	—	—	—	—	22
TOTAL—Communicable diseases	**211·92**	**1·0**	**4·5**	**307·3**	**24·7**	**449·87**	**1·7**	**38 36**	**7·85**	**44·6**	**31·6**	
Carriers:—Diphtheria, dysentery, cerebro spinal fever	0·33	—	—	0·4	19·3	—	—	—	—	—	—	23
Contacts	4·52	—	—	3·8	14·4	0·87	—	—	—	0·0	15·0	24
Other Common Diseases due to Infection.												
Abscesses, hand	3·31	—	—	3·5	18·1	6·97	—	—	—	0·1	6·2	25
,, , others	4·89	—	—	4·0	17·2	2·62	—	—	—	0·2	19·0	26
Boils	9·14	—	—	7·5	14·1	8·72	—	—	—	0·3	11·6	27
Bone infection	0·79	—	0·23	4·8	104·4	3·49	—	0·87	6·10	5·0	366·0	28
Carbuncles	1·21	—	—	1·3	17·9	2·62	—	0·87	—	0·1	13·7	29
Cellulitis	5·73	0·05	0·05	5·9	17·5	10·40	—	—	—	0·9	27·6	30
Lymphadenitis	4·15	—	—	5·8	23·8	2·62	—	—	—	0·5	59·7	31

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Sickness under Geographical Areas—*continued.*

	Egypt, Palestine "Q" and "Z" Forces.						Mesopotamia.						Total.				
	Ratios per 1,000 of Average Annual Strength.				Averages.		Ratios per 1,000 of Average Annual Strength.				Averages.		Ratios per 1,000 of Average Annual Strength.			Averages.	
	Cases.	Deaths.	Invalided to U.K.	Finally Invalided.	Constantly Sick.	Duration of Case.	Cases.	Deaths.	Invalided to U.K.	Finally Invalided.	Constantly Sick.	Duration of Case.	Cases.	Deaths.	Invalided.	Constantly Sick.	Duration of Case.
1	—	—	—	—	—	—	—	—	—	—	—	—	**0·08**	**0·04**	**0·15**	**0·8**	**146·0**
2	2·44	—	1·22	0·81	1·3	78·7	—	—	—	—	—	—	**2·89**	**0·23**	**2·74**	**15·1**	**73·7**
3	0·41	—	—	—	0·1	24·0	—	—	—	—	—	—	**0·04**	—	—	**1·1**	**366·0**
	4·06	**0·41**	**1·62**	**1·22**	**2·9**	**102·0**	**1·15**	—	—	—	**0·1**	**53·0**	**3·93**	**0·42**	**3·35**	**24·6**	**88·5**
4	8·12	—	—	—	0·5	9·3	3·46	—	—	—	0·0	3·7	**3·66**	—	—	**2·3**	**8·8**
5	1·22	—	—	—	0·2	20·3	—	—	—	—	—	—	**3·24**	—	**0·04**	**3·2**	**14·1**
6	5·25	—	—	—	0·1	5·0	2·30	—	—	—	0·0	5·0	**7·02**	—	—	**3·3**	**6·6**
7	1·62	—	—	—	0·1	10·5	4·61	—	—	—	0·1	6·0	**1·31**	—	—	**1·1**	**12·3**
8	7·31	—	—	—	0·3	6·2	5·76	—	—	—	0·1	7·2	**11·30**	—	—	**6·3**	**7·8**
9	16·24	—	—	—	0·7	6·3	11·52	—	—	—	0·1	3·7	**8·60**	—	—	**5·0**	**8·3**
10	33·62	—	—	—	3·7	9·9	21·89	—	—	—	0·7	13·4	**31·11**	—	—	**24·6**	**11·1**
11	—	—	—	—	—	—	—	—	—	—	—	—	**0·46**	—	—	**0·7**	**21·2**
	93·40	—	—	—	**5·6**	**8·9**	**49·55**	—	—	—	**1·0**	**8·6**	**66·70**	—	**0·04**	**46·5**	**9·8**
12	0·41	—	—	—	0·4	14·4	—	—	—	—	—	—	**5·17**	—	—	**4·4**	**12·0**
13	49·33	—	1·62	—	28·1	84·5	8·06	—	—	—	0·9	48·4	**23·63**	—	—	**125·0**	**74·7**
14	6·50	—	—	—	3·4	78·4	1·15	—	—	—	0·0	2·0	**4·82**	—	—	**16·1**	**47·2**
15	2·65	—	—	—	1·9	78·8	—	—	—	—	—	—	**1·93**	—	—	**7·9**	**57·9**
16	2·03	—	0·41	—	1·2	91·2	—	—	—	—	—	—	**1·73**	—	—	**6·7**	**54·8**
17	22·74	—	0·81	—	14·7	95·9	1·15	—	—	—	0·1	22·0	**9·56**	—	**0·04**	**45·2**	**66·6**
18	2·84	—	—	—	1·0	53·4	—	—	—	—	—	—	**3·08**	—	—	**12·5**	**57·1**
19	1·22	—	—	—	0·6	67·0	—	—	—	—	—	—	**1·00**	—	**0·12**	**3·9**	**55·3**
20	—	—	—	—	—	—	—	—	—	—	—	—	**0·19**	—	**0·08**	**1·2**	**87·2**
21	8·93	—	—	—	2·0	33·2	2·30	—	1·15	—	0·5	87·0	**3·70**	—	—	**10·1**	**38·5**
	97·44	—	**2·84**	—	**52·9**	**80·8**	**12·66**	—	**1·15**	—	**1·5**	**48·8**	**49·64**	—	**0·23**	**228·7**	**65·0**
22	—	—	—	—	—	—	—	—	—	—	—	—	**0·04**	—	—	**0·1**	**28·0**
	484·37	**2·4**	**7·3**	**1·6**	**99·4**	**30·5**	**1121·00**	**3·5**	**8·1**	—	**33·9**	**12·8**	**278·64**	**1·2**	**4·2**	**485·3**	**24·6**
23	0·41	—	—	—	0·1	21·0	—	—	—	—	—	—	**0·31**	—	—	**0·4**	**19·5**
24	0·81	—	—	—	—	8·5	1·15	—	—	—	0·0	11·0	**3·89**	—	—	**3·9**	**14·2**
25	6·50	—	—	—	0·5	10·9	4·61	—	—	—	0·2	14·3	**3·82**	—	—	**4·3**	**15·8**
26	6·09	—	—	—	1·1	25·9	8·06	—	—	—	0·5	27·4	**5·01**	—	—	**6·7**	**18·8**
27	10·15	—	—	—	1·2	18·0	17·28	—	—	—	0·3	6·8	**9·48**	—	—	**9·4**	**13·9**
28	1·62	—	0·41	0·81	0·8	72·0	1·15	—	—	—	0·1	31·0	**1·00**	—	**0·54**	**10·7**	**150·6**
29	0·81	—	—	—	0·0	6·5	—	—	—	—	—	—	**1·20**	—	—	**1·4**	**16·8**
30	19·08	—	—	—	1·3	9·9	26·50	—	—	—	0·8	12·8	**7·90**	**0·04**	**0·04**	**8·9**	**15·8**
31	7·31	—	—	—	0·8	16·4	8·06	—	—	—	0·2	11·0	**4·51**	—	—	**7·3**	**22·9**

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TABLE II.—Nosological Table showing

Disease.	United Kingdom. Ratios per 1,000 of Average Annual Strength. Cases.	Deaths.	Invalids.	Averages. Constantly Sick.	Duration of Case.	Rest of Europe. Ratios per 1,000 of Average Annual Strength. Cases.	Deaths.	Invalided to U.K.	Finally Invalided.	Averages. Constantly Sick.	Duration of Case.	
***Other Common Diseases due to Infection*—continued.**												
Pyæmia	—	—	—	—	—	0·87	0·87	—	—	0·3	92·0	1
Septicæmia	0·05	0·05	—	0·0	5·0	—	—	—	—	—	—	2
Ulcer	1·31	—	0·19	3·9	50·9	0·87	—	—	0·87	0·2	85·0	3
TOTAL	**30·55**	**0·10**	**0·47**	**37·6**	**21·0**	**39·23**	**0·87**	**1·74**	**6·97**	**7·6**	**61·6**	
Effects of Parasites.												
Bilharzia hæmatobia	0·05	—	—	0·1	41·0	—	—	—	—	—	—	4
Pediculosis pubis	1·35	—	—	0·5	6·1	—	—	—	—	—	—	5
„ vestimenti	0·33	—	—	0·1	4·0	0·87	—	—	—	0·0	2·0	6
„ capitis	0·19	—	—	0·1	8·8	—	—	—	—	—	—	7
Cestoda	0·00	—	—	0·2	—	0·87	—	—	—	0·0	8·0	8
Nematoda	0·09	—	—	0·1	15·0	—	—	—	—	—	—	9
TOTAL	**2·00**	—	—	**1·1**	**9·0**	**1·74**	—	—	—	**0·0**	**5·0**	
Diseases of the Nervous System.												
Neuritis, localised	0·79	—	0·05	1·4	30·6	2·62	—	2·62	2·62	1·7	204·7	10
„ multiple	—	—	—	—	—	—	—	—	—	—	—	11
Sciatica	0·70	—	0·05	2·1	51·2	1·74	—	—	—	0·2	37·5	12
Nerve paralysis	0·42	—	0·23	2·5	103·0	—	—	—	2·62	1·4	—	13
Tabes dorsalis	0·00	—	—	0·1	—	—	—	—	—	—	—	14
Myelitis	—	—	—	—	—	—	—	—	—	—	—	15
Neuralgia	0·56	—	—	0·5	14·6	1·74	—	—	—	0·1	24·0	16
Epilepsy	1·12	—	0·98	2·1	32·1	—	—	—	—	—	—	17
„ Jacksonian	0·14	—	0·09	0·2	20·0	—	—	—	—	—	—	18
„ (observation)	1·44	—	0·05	1·1	13·5	—	—	—	—	—	—	19
Hysteria	0·89	—	0·19	1·0	19·3	—	—	—	—	—	—	20
Neurasthenia	4·20	—	1·31	10·9	44·2	1·74	—	—	1·74	1·8	279·5	21
Other diseases of nerve, spinal cord, and brain	0·51	0·05	0·14	1·1	35·8	—	—	—	—	—	—	22
Mental diseases, including observation cases	1·44	—	1·21	9·9	116·9	0·87	—	0·87	9·59	3·0	366·0	23
TOTAL	**12·21**	**0·05**	**4·29**	**32·9**	**46·0**	**8·72**	—	**3·49**	**16·56**	**7·9**	**290·9**	
Diseases of the Eye.												
Conjunctivitis	2·29	—	0·14	2·1	15·9	1·74	—	—	—	0·0	5·0	24
Iritis	0·28	—	0·14	0·6	36·3	—	—	—	—	—	—	25
Ametropia	1·54	—	0·19	0·9	10·0	—	—	—	—	—	—	26
Blepharitis	0·65	—	0·09	0·6	14·9	0·87	—	—	—	0·0	5·0	27
Other diseases of the eye	1·31	—	—	1·7	22·0	—	—	—	—	—	—	28
TOTAL	**6·06**	—	**0·56**	**5·9**	**16·5**	**2·62**	—	—	—	**0·0**	**5·0**	
Diseases of Ear and Nose.												
Otitis media	4·66	—	1·72	7·7	28·2	6·10	—	—	0·87	0·5	27·9	29
Other diseases of ear	0·42	—	—	0·4	18·2	1·74	—	—	—	0·0	7·0	30
Deformities of Nasal Septum	2·24	—	0·05	4·7	35·9	0·87	—	0·87	—	0·1	34·0	31
Sinusitis	0·61	—	0·23	3·3	92·2	0·87	—	—	—	0·1	29·0	32
Other diseases of nose	0·37	—	0·05	0·8	37·6	—	—	—	—	0·3	—	33
TOTAL	**8·30**	—	**2·05**	**17·0**	**34·9**	**9·59**	—	**0·87**	**0·87**	**1·0**	**34·3**	

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SICKNESS UNDER GEOGRAPHICAL AREAS—*continued.*

	Egypt, Palestine, "Q" and "Z" Forces.						Mesopotamia.						TOTAL.				
	Ratios per 1,000 of Average Annual Strength.				Averages.		Ratios per 1,000 of Average Annual Strength.				Averages.		Ratios per 1,000 of Average Annual Strength.			Averages.	
	Cases.	Deaths.	Invalided to U.K.	Finally Invalided.	Constantly Sick.	Duration of Case.	Cases.	Deaths.	Invalided to U.K.	Finally Invalided.	Constantly Sick.	Duration of Case.	Cases.	Deaths.	Invalided.	Constantly Sick.	Duration of Case.
1	—	—	—	—	—	—	—	—	—	—	—	—	0·04	0·04	—	0·3	92·0
2	0·41	—	—	—	0·0	9·0	—	—	—	—	—	—	0·08	0·04	—	0·0	7·0
3	6·09	—	—	—	0·9	21·9	10·34	—	—	—	0·4	17·6	2·04	—	0·19	5·5	37·7
	50·06	**—**	**0·41**	**0·81**	**6·6**	**16·9**	**76·04**	**—**	**—**	**—**	**2·5**	**13·8**	**35·08**	**0·12**	**0·77**	**54·3**	**21·9**
4	—	—	—	—	—	—	—	—	—	—	—	—	0·04	—	—	0·1	41·0
5	—	—	—	—	—	—	1·15	—	—	—	0·0	2·0	1·16	—	—	0·5	6·0
6	—	—	—	—	—	—	—	—	—	—	—	—	0·31	—	—	0·1	3·7
7	—	—	—	—	—	—	—	—	—	—	—	—	0·16	—	—	0·1	8·7
8	—	—	—	—	—	—	—	—	—	—	—	—	0·04	—	—	0·2	83·0
9	—	—	—	—	—	—	—	—	—	—	—	—	0·08	—	—	0·1	15·0
	—	—	—	—	—	—	1·15	—	—	—	0·0	2·0	1·77	—	—	1·1	8·8
	2·44	—	—	—	0·3	17·0	2·30	—	—	—	0·1	10·5	1·08	—	0·16	3·4	44·9
	—	—	—	—	0·2	—	—	—	—	—	—	—	—	—	—	0·2	—
	1·22	—	—	—	0·2	25·7	1·15	—	—	—	0·0	16·0	0·81	—	0·04	2·6	44·6
	0·81	—	—	—	0·5	87·0	—	—	—	—	—	—	0·42	—	0·31	4·4	147·2
	0·41	—	0·41	—	0·4	151·0	—	—	—	—	—	—	0·04	—	—	0·5	185·0
	0·41	—	—	—	0·1	43·0	—	—	—	—	—	—	0·04	—	—	0·1	43·0
	3·65	—	—	—	0·4	15·6	1·15	—	—	—	0·0	4·0	0·93	—	—	1·0	15·3
	—	—	—	—	—	—	1·15	—	1·15	1·15	0·5	175·0	0·96	—	0·85	2·6	37·8
	—	—	—	—	—	—	—	—	—	—	—	—	0·12	—	0·08	0·2	20·0
	0·81	—	—	—	0·0	9·0	—	—	—	—	—	—	1·27	—	0·04	1·2	13·2
	0·81	—	—	—	0·1	9·5	—	—	—	—	—	—	0·81	—	0·16	1·1	18·3
	2·44	—	1·62	0·81	1·8	109·3	11·52	—	3·46	—	1·5	53·5	4·16	—	1·23	15·6	53·0
	0·81	—	—	—	0·1	21·0	4·61	—	—	—	0·0	3·0	0·66	0·04	0·12	1·2	26·3
	2·03	—	0·81	2·84	3·1	225·2	—	—	—	—	—	—	1·43	—	1·69	16·0	157·9
	15·83	**—**	**2·84**	**3·65**	**7·1**	**66·9**	**21·89**	**—**	**4·61**	**1·15**	**2·1**	**40·2**	**12·72**	**0·04**	**4·66**	**50·1**	**55·5**
	4·06	—	—	—	0·4	13·5	1·15	—	—	—	0·0	6·0	2·39	—	0·12	2·5	15·0
	0·81	—	—	—	0·2	44·5	—	—	—	—	—	—	0·31	—	0·12	0·8	38·4
	0·81	—	—	—	0·1	15·5	2·30	—	—	—	0·1	11·5	1·43	—	0·16	1·0	10·3
	1·81	—	—	—	0·1	22·0	—	—	—	—	—	—	0·66	—	0·08	0·7	15·2
	—	—	—	—	—	—	—	—	—	—	—	—	1·08	—	—	1·7	22·0
	6·50	—	—	—	0·8	18·7	3·46	—	—	—	0·1	9·7	5·86	—	0·46	6·8	16·4
	7·71	—	0·41	0·41	1·0	19·6	14·98	—	—	1·15	1·1	30·1	5·36	—	1·54	10·3	27·2
	2·03	—	—	—	0·1	7·0	1·15	—	—	—	0·1	23·0	0·66	—	—	0·6	13·9
	4·41	—	—	—	0·2	81·0	—	—	—	—	—	—	1·93	—	0·04	5·0	36·8
	—	—	—	—	—	—	1·15	—	—	—	0·0	5·0	0·58	—	0·19	3·4	82·1
	2·03	—	—	—	0·4	40·0	1·15	—	—	—	0·0	4·0	0·50	—	0·04	1·6	44·0
	4·77	**—**	**0·41**	**0·41**	**1·8**	**22·4**	**18·43**	**—**	**—**	**1·15**	**1·2**	**26·4**	**9·02**	**—**	**1·81**	**20·9**	**32·7**

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TABLE II.—Nosological Table showing

Disease.	United Kingdom.					Rest of Europe.					
	Ratios per 1,000 of Average Annual Strength.			Averages.		Ratios per 1,000 of Average Annual Strength.				Averages.	
	Cases.	Deaths.	Invalids.	Constantly Sick.	Duration of Case.	Cases.	Deaths.	Invalided to U.K.	Finally Invalided.	Constantly Sick.	Duration of Case.
Diseases of Circulatory System.											
Endocardiitis acute	0·09	0·05	—	0·1	19·0	—	—	—	—	—	—
Mitral regurgitation	1·12	—	0·65	2·5	38·2	0·87	—	0·87	0·87	0·2	67·0
Aortic regurgitation	0·33	—	0·28	1·8	96·3	—	—	—	—	—	—
Hypertrophy of heart	0·05	—	—	0·0	12·0	—	—	—	—	—	—
Dilatation of heart	0·56	—	0·09	0·7	20·7	—	—	—	—	—	—
Disordered action of heart	6·76	—	0·79	7·5	19·0	1·74	—	—	1·74	1·4	251·5
Diseases of arteries	0·23	—	0·14	0·5	35·2	—	—	—	—	—	—
Phlebitis	0·61	—	—	1·1	29·7	1·74	—	—	—	0·0	5·0
Varix	1·40	—	0·05	2·6	31·6	—	—	—	—	—	—
Anæmia: secondary	0·56	—	0·05	0·5	14·7	—	—	—	—	—	—
Other diseases of circulatory system	0·19	—	—	0·2	17·2	—	0·87	—	—	0·0	—
TOTAL	**11.89**	**0·05**	**2·05**	**17·5**	**25·2**	**4·36**	**0·87**	**0·87**	**2·62**	**1·6**	**116·2**
Diseases of Lymphatic System and Ductless Glands	0·23	0·05	0·09	0·4	28·4	—	—	—	—	—	—
Diseases of the Respiratory System.											
Bronchitis	13·10	—	0·42	12·2	15·9	8·72	—	0·87	—	0·5	19·4
Asthma	0·98	—	0·05	1·3	22·7	—	—	—	—	—	—
Broncho-pneumonia	0·37	0·09	—	1·1	48·6	0·87	0·87	—	—	0·0	10·0
Pleurisy: dry	1·58	—	—	1·5	16·1	2·62	—	—	—	0·3	35·3
Pleurisy: with effusion	0·37	—	0·09	1·2	56·0	0·87	—	—	—	0·1	28·0
Empyema	0·19	0·05	—	1·5	135·7	—	—	—	—	0·3	—
Other diseases of respiratory system	0·28	—	0·05	0·7	43·7	—	—	—	—	—	—
TOTAL	**16·87**	**0·14**	**0·61**	**19·5**	**19·7**	**13·08**	**0·87**	**0·87**	—	**1·2**	**29·5**
Diseases of Teeth and Gums.											
Alveolo-dental periostitis	2·89	—	—	1·9	11·5	5·23	—	—	—	0·2	10·5
Pyorrhœa alveolaris	0·37	—	—	0·5	22·0	0·87	—	0·87	—	0·2	68·0
Other diseases of teeth and gums	0·89	—	—	0·6	10·9	10·46	—	1·74	—	0·6	18·8
TOTAL	**4·15**	—	—	**3·0**	**12·3**	**16·56**	—	**2·62**	—	**1·0**	**18·7**
Diseases of the Digestive System.											
Hypertrophy of tonsils	2·84	—	0·09	4·4	26·0	0·87	—	—	—	0·1	34·0
Adenoid vegetations	0·37	—	—	0·3	11·9	—	—	—	—	—	—
Other diseases of mouth and nasopharynx	0·42	—	—	1·1	45·4	0·87	—	—	—	0·0	13·0
Gastritis	3·40	—	0·33	3·7	18·4	4·36	—	—	—	0·1	9·8
Ulceration of stomach	9·19	—	—	0·5	42·0	—	—	—	—	—	—
Perforated gastric ulcer	0·23	0·05	—	0·4	32·4	—	—	—	—	—	—
Dyspepsia	2·89	—	—	2·4	13·9	—	—	—	—	—	—
Other diseases of stomach	0·75	—	0·05	0·9	21·4	—	—	—	—	—	—
Appendicitis	4·61	0·05	0·09	9·4	34·9	2·62	—	0·87	—	0·3	39·7
Duodenal ulcer	0·19	—	0·05	0,7	67·2	—	—	—	—	—	—
Hernia	4·15	—	—	12·5	51·5	2·62	—	1·74	0·87	0·4	44·7
Constipation	2·47	—	0·05	1·8	12·8	—	—	—	—	—	—
Colic	2·24	—	—	1·1	8·5	2·62	—	—	—	0·0	5·3

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Sickness under Geographical Areas—*continued.*

	Egypt—Palestine "Q" and "Z" Forces.						Mesopotamia.						Total.				
	Ratios per 1,000 of Average Annual Strength.				Averages.		Ratios per 1,000 of Average Annual Strength.				Averages.		Ratios per 1,000 of Average Annual Strength.			Averages.	
	Cases.	Deaths.	Invalided to U.K.	Finally Invalided.	Constantly Sick.	Duration of Case.	Cases.	Deaths.	Invalided to U.K.	Finally Invalided.	Constantly Sick.	Duration of Case.	Cases.	Deaths.	Invalided.	Constantly Sick.	Duration of Case.
1	—	—	—	—	—	—	—	—	—	—	—	—	0·08	0·04	—	0·1	19·0
2	1·22	—	0·41	—	0·7	84·3	—	—	—	—	—	—	1·08	—	0·58	3·4	44·2
3	0·41	—	0·41	0·41	0·3	122·0	—	—	—	—	—	—	0·31	—	0·27	2·2	99·5
4	—	—	—	—	—	—	—	—	—	—	—	—	0·04	—	—	0·0	12·0
5	0·41	—	—	—	0·1	23·0	—	—	—	—	—	—	0·50	—	0·08	0·7	20·9
6	16·24	—	0·81	—	2·2	199·2	8·06	—	1·15	—	0·8	40·1	7·50	—	0·73	11·9	22·4
7	—	—	—	—	—	—	—	—	—	—	—	—	0·19	—	0·12	0·5	35·2
8	0·81	—	—	—	0·3	52·5	—	—	—	—	0·2	—	0·66	—	—	1·5	33·1
9	0·81	—	0·41	0·41	0·4	66·5	2·30	—	—	—	0·3	55·0	1·31	—	0·08	3·3	35·0
10	2·03	—	0·41	—	0·5	37·6	1·15	—	—	—	0·1	30·0	0·69	—	0·04	1·1	21·9
11	1·22	—	0·41	—	0·3	40·7	1·15	—	—	—	0·1	29·0	0·31	0·04	—	0·6	27·6
	23·14	—	2·84	0·81	4·8	30·6	12·67	—	1·15	—	1·3	4·69	12·64	0·08	1·89	25·2	28·2
12	1·22	—	—	—	0·3	39·7	—	—	—	—	—	—	0·31	0·04	0·08	0·7	32·6
13	20·71	—	1·62	0·81	3·1	22·1	8·06	—	—	—	0·3	17·8	13·45	—	0·42	16·2	17·0
14	0·41	—	—	—	0·0	7·0	1·15	—	—	—	0·0	8·0	0·89	—	0·04	1·3	21·3
15	0·80	—	—	—	0·2	38·0	—	—	—	—	—	—	0·42	0·12	—	1·3	43·2
16	1·22	—	—	—	0·1	17·0	1·15	—	—	—	0·0	3·0	·58	—	—	1·9	17·3
17	0·41	—	—	—	0·0	7·0	—	—	—	—	—	—	0·38	—	0·08	1·3	48·3
18	—	—	—	0·41	0·4	—	—	—	—	—	—	—	0·16	0·04	0·04	2·2	201·1
19	0·41	—	—	—	0·2	68·0	—	—	—	—	—	—	0·27	—	0·04	0·9	47·1
	23·95	—	1·62	1·22	4·1	25·3	10·37	—	—	—	0·4	15·1	17·15	0·16	0·62	25·2	20·7
20	3·44	—	—	—	0·1	3·7	3·46	—	—	—	0·1	6·7	2·97	—	—	2·2	10·6
21	0·81	—	—	—	0·0	6·0	—	—	—	—	—	—	0·42	—	—	0·7	23·3
22	0·41	—	—	—	0·0	3·0	1·15	—	—	—	0·0	16·0	1·27	—	—	1·2	13 7
	3·65	—	—	—	0·1	4·1	4·61	—	—	—	0·1	9·0	4·66	—	—	4·2	12.6
23	0·41	—	—	—	0·1	27·0	—	—	—	—	—	—	2·43	—	0·08	4·5	26·2
24	0·41	—	—	—	0·1	20·0	—	—	—	—	—	—	0·35	—	—	0·3	12·8
25	0·41	—	—	—	0·0	6·0	1·15	—	—	—	0·0	4·0	0·46	—	—	1·2	36·0
26	4·87	—	—	—	1·1	33·3	1·15	—	—	—	0·1	25·0	3·51	—	0·27	5·0	19·9
27	—	—	—	—	—	—	—	—	—	—	—	—	0·16	—	—	0·5	42·0
28	—	—	—	—	—	—	—	—	—	—	—	—	0·19	0·04	—	0·4	32·4
29	4·47	—	—	—	0·4	12·5	3·46	—	—	—	0·1	11·3	2·93	—	—	2·8	13·6
30	—	—	—	—	—	—	—	—	—	—	—	—	0·62	—	0·04	0·9	21·4
31	3·25	—	—	—	0·6	29·4	5·76	—	—	—	0·4	32·4	4·43	0·04	0·08	10·8	34·4
32	—	—	—	—	—	—	—	—	—	—	—	—	0·16	—	0·04	0·7	67·2
33	2·44	—	—	—	0·7	41·0	5·76	—	—	—	0·3	18·4	3·97	—	0·04	13·8	49·1
34	14·62	—	—	—	0·7	6·8	12·67	—	—	—	0·2	6·7	3·86	—	0·04	2·7	10·0
35	4·87	—	—	—	0·3	8·7	2·30	—	—	—	0·0	6·0	2·51	—	—	1·5	8·4

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TABLE II.—Nosological Table showing

Disease.	United Kingdom. Ratios per 1,000 of Average Annual Strength.			Averages.		Rest of Europe. Ratios per 1,000 of Average Annual Strength.				Averages.	
	Cases.	Deaths.	Invalids.	Constantly Sick.	Duration of Case.	Cases.	Deaths.	Invalided to U.K.	Finally Invalided.	Constantly Sick.	Duration of Case.
***Diseases of the Digestive System*—cont.**											
Other diseases of intestines	0·61	—	0·14	1·9	53·4	0·87	—	—	0·87	0·1	30·0
Ischio-rectal abscess	0·33	—	—	1·1	59·4	—	—	—	—	—	—
Fistula in ano	0·23	—	0·05	1·5	106·6	—	—	—	—	0·1	—
Hæmorrhoids	2·62	—	—	4·6	30·2	2·62	—	—	—	0·1	8·7
Other diseases of rectum and anus	0·09	—	—	0·3	47·0	—	—	—	—	—	—
Jaundice	1·35	0·05	—	1·7	21·4	0·87	0·87	—	—	0·3	100·0
Other diseases of liver and gall bladder	0·28	—	0·05	0·6	33·8	—	—	—	—	—	—
TOTAL	**30·25**	**0·14**	**0·89**	**50·9**	**28·7**	**18·31**	**0·87**	**2·62**	**1·74**	**1·6**	**27·3**
Diseases due to Disorders of Nutrition or Metabolism.											
Gout	0·28	—	—	0·2	13·7	—	—	—	—	—	—
Diabetes mellitus	0·19	—	0·19	1·2	106·0	—	—	—	—	—	—
TOTAL	**0·47**	—	**0·19**	**1·4**	**50·6**	—	—	—	—	—	—
Diseases of the Generative System.											
Phimosis	2·80	—	—	4·1	24·7	1·74	—	—	—	0·3	58·0
Balanitis	1·58	—	—	1·6	16·9	0·87	—	—	—	—	10·0
Urethritis: non-venereal	0·65	—	—	0·6	14·5	0·87	—	—	—	0·1	21·0
Stricture of urethra	0·23	—	—	0·1	9·2	—	—	—	0·87	0·3	—
Varicocele	1·58	—	—	3·4	36·8	—	—	—	—	—	—
Hydrocele	0·75	—	—	1·9	43·9	—	—	—	—	—	—
Orchitis and Epididymitis	0·70	—	—	1·4	34·0	1·74	—	—	—	0·1	21·5
Other diseases of the generative system	0·70	—	—	0·9	23·0	1·74	—	—	—	0·1	20·5
TOTAL	**9·00**	—	—	**14·0**	**26·5**	**6·97**	—	—	**0·87**	**0·9**	**42·2**
Diseases of Organs of Locomotion.											
Un-united fractures	0·33	—	0·05	2·8	145·7	—	—	—	—	0·2	—
Malformation of bones as result of old injury	0·37	—	0·28	2·7	124·2	—	—	—	4·36	2·3	—
Synovitis of knee: chronic	2·80	—	0·14	4·1	24·9	3·49	—	1·74	—	0·4	38·5
Rheumatoid and osteo arthritis	2·19	—	0·28	5·3	40·9	2·62	—	—	—	0·1	16·3
Ankylosis	0·33	—	0·28	1·0	54·3	2·62	—	2·62	4·36	2·2	270·0
Other diseases of bones and joints	0·28	—	0·14	0·7	10·0	0·87	—	—	1·74	0·8	297·0
Spinal curvature	0·19	—	0·09	0·6	53·5	—	—	—	—	—	—
Other diseases of spine	—	—	0·05	0·2	—	—	—	—	0·87	0·2	—
Myalgia	6·90	—	0·09	5·5	13·6	6·10	—	0·87	—	0·3	14·0
Atrophy of muscle	0·61	—	0·37	2·8	78·1	1·74	—	0·87	1·74	0·7	130·5
Teno-synovitis	0·28	—	—	0·2	13·3	—	—	—	—	—	—
Cicatricial contraction of tendons	0·23	—	0·14	0·6	41·2	—	—	—	—	—	—
Bursitis	0·37	—	—	0·3	13·9	0·87	—	0·87	0·87	0·2	83·0
Other diseases of muscles and tendons	0·23	—	—	0·3	25·2	—	—	—	—	—	—
Flat foot	0·37	—	0·23	0·4	16·6	0·87	—	—	0·87	0·4	136·0
Hallux valgus	0·37	—	0·05	1·4	62·5	—	—	—	—	—	—
Hammer toe	1·31	—	0·05	1·8	23·9	—	—	—	—	0·1	—
Other deformities of limbs	0·23	—	—	0·5	33·6	—	—	—	—	—	—
TOTAL	**17·39**	—	**2·24**	**31·1**	**30·5**	**19·18**	—	**6·97**	**14·82**	**7·9**	**131·8**

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SICKNESS UNDER GEOGRAPHICAL AREAS—*continued.*

Egypt—Palestine "Q" and "Z" Forces						Mesopotamia.						TOTAL.				
Ratios per 1,000 of Average Annual Strength				Averages.		Ratios per 1,000 of Average Annual Strength.				Averages.		Ratios per 1,000 of Average Annual Strength.			Averages.	
Cases.	Deaths.	Invalided to U.K.	Finally Invalided.	Constantly Sick.	Duration of Case.	Cases.	Deaths.	Invalided to U.K.	Finally Invalided.	Constantly Sick.	Duration of Case.	Cases.	Deaths.	Invalided.	Constantly Sick.	Duration of Case.
2·44	—	—	—	0·5	30·8	4·61	—	—	—	0·1	8·2	0·93	—	0·16	2·6	39·2
—	—	—	—	—	—	—	—	—	—	—	—	0·27	—	—	1·1	59·4
0·41	—	—	—	0·1	29·0	—	—	—	—	—	—	0·23	—	0·04	1·7	102·3
4·47	—	—	—	0·7	21·7	6·91	—	—	—	0·2	11·3	2·93	—	—	5·6	26·7
—	—	—	—	—	—	—	—	—	—	—	—	0·08	—	—	0·3	47·0
6·50	—	0·41	—	1·4	32·6	8·06	—	—	—	0·3	16·8	2·04	0·08	—	3·7	25·7
0·41	—	—	—	0·0	11·0	—	—	—	—	—	—	0·27	—	0·04	0·6	30·6
49·94	**—**	**0·41**	**—**	**6·6**	**19·5**	**51·84**	**—**	**—**	**—**	**1·7**	**13·8**	**32·30**	**0·16**	**0·81**	**60·7**	**26·5**
—	—	—	—	—	—	—	—	—	—	—	—	0·23	—	—	0·2	13·7
—	—	—	—	—	—	—	—	—	—	—	—	0·16	—	0·16	1·2	106·0
—	—	—	—	—	—	—	—	—	—	—	—	0·39	—	0·16	1·4	50·6
3·25	—	—	—	0·6	27·5	3·46	—	—	—	0·2	21·3	2·81	—	—	5·1	25·8
4·06	—	—	—	0·6	22·6	—	—	—	—	—	—	1·73	—	—	2·2	18·0
0·81	—	—	—	0·1	20·5	—	—	—	—	—	—	0·66	—	—	0·7	15·6
—	—	—	—	—	—	—	—	—	—	—	—	0·19	—	0·04	0·4	30·6
9·41	—	—	—	0·1	23·0	1·15	—	—	—	0·1	27·0	1·39	—	—	3·6	36·2
0·81	—	—	—	0·4	81·0	—	—	—	—	—	—	0·69	—	—	2·4	48·1
1·22	—	—	—	0·1	14·6	—	—	—	—	—	—	0·77	—	—	1·6	29·8
2·44	—	—	—	0·4	22·7	2·30	—	—	—	0·4	64·5	0·96	—	—	1·8	26·0
12·99	**—**	**—**	**—**	**2·3**	**26·5**	**6·91**	**—**	**—**	**—**	**0·6**	**36·7**	**9·22**	**—**	**0·04**	**17·8**	**27·5**
—	—	—	0·41	0·3	—	—	—	—	—	—	—	0·27	—	0·08	3·2	169·9
0·81	—	—	—	0·1	27·0	—	—	—	—	—	—	0·39	—	0·42	5·2	190·1
1·62	—	—	—	0·1	12·7	2·30	—	—	—	0·0	6·0	2·70	—	0·12	4·7	24·5
4·47	—	0·41	—	1·2	40·9	1·15	—	—	—	0·0	12·0	2·39	—	0·23	6·7	39·2
—	—	—	—	0·1	—	1·15	—	—	—	0·0	6·0	0·42	—	0·42	3·4	112·1
0·41	—	—	—	0·1	28·0	—	—	—	—	—	—	0·31	—	0·19	1·5	70·6
1·62	—	0·41	0·41	0·3	27·0	—	—	—	—	—	—	0·31	—	0·12	0·9	40·2
—	—	—	—	—	—	—	—	—	—	—	—	—	—	0·08	0·4	—
3·25	—	—	—	0·5	23·4	4·61	—	—	—	0·0	3·2	6·44	—	0·08	6·3	13·8
0·41	—	—	—	0·1	28·0	—	—	—	—	—	—	0·62	—	0·39	3·6	81·5
—	—	—	—	—	—	—	—	—	—	—	—	0·22	—	—	0·2	13·3
—	—	—	—	—	—	—	—	—	—	—	—	0·19	—	0·12	0·6	41·2
0·81	—	—	—	0·1	12·0	—	—	—	—	—	—	0·42	—	0·04	0·6	19·8
—	—	—	0·41	0·2	—	—	—	—	—	—	—	0·19	—	0·04	0·5	35·8
0·41	—	0·41	—	0·5	174·0	—	—	—	—	—	—	0·39	—	0·23	1·2	44·3
—	—	—	—	—	—	—	—	—	—	—	—	0·31	—	0·04	1·4	62·5
1·22	—	—	—	0·4	45·3	1·15	—	—	—	0·0	5·0	1·23	—	0·04	2·3	26·0
—	—	—	—	—	—	—	—	—	—	—	—	0·19	—	—	0·4	33·6
15·02	**—**	**1·22**	**1·22**	**3·9**	**38·7**	**10·37**	**—**	**—**	**—**	**0·1**	**5·3**	**17·00**	**—**	**2·62**	**43·0**	**35·7**

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TABLE II.—Nosological Table showing

Disease.	United Kingdom. Ratios per 1,000 of Average Annual Strength. Cases.	Deaths.	Invalids.	Averages. Constantly Sick.	Duration of Case.	Rest of Europe. Ratios per 1,000 of Average Annual Strength. Cases.	Deaths.	Invalided to U.K.	Finally Invalided.	Averages. Constantly Sick.	Duration of Case.	
Diseases of areolar tissue	0·37	—	0·05	0·5	22·2	0·87	—	0·87	—	0·7	24·0	1
Diseases of the Skin.												
Dermatitis	2·52	—	—	2·8	19·0	—	—	—	—	—	—	2
Erythemata	0·51	—	—	0·3	9·8	0·87	—	—	—	0·0	9·0	3
Urticaria	0·98	—	—	0·6	11·0	—	—	—	—	—	—	4
Eczema	3·26	—	0·14	5·7	29·7	4·36	—	—	—	0·4	26·4	5
Herpes Zoster	1·17	—	—	0·9	12·7	0·87	—	—	—	0·0	15·0	6
Psoriasis	1·31	—	0·14	1·9	24·9	—	—	—	—	—	—	7
Corns	0·56	—	—	0·4	12·7	—	—	—	—	—	—	8
Tinea	0·98	—	—	0·9	15·2	—	—	—	—	—	—	9
Acne	0·84	—	—	1·2	23·8	—	—	—	—	—	—	10
Sudamina	—	—	—	—	—	—	—	—	—	—	—	11
Ingrowing toe nail	2·38	—	—	2·6	18·8	—	—	—	—	—	—	12
Other diseases of the skin	1·35	—	0·09	3·4	43·3	3·49	—	—	0·87	0·3	25·7	13
TOTAL	**15·85**	**—**	**0·37**	**20·7**	**22·3**	**9·59**	**—**	**—**	**0·87**	**0·7**	**23·5**	
Diseases of the Urinary Organs.												
Nephritis, acute	0·14	0·09	0·09	0·4	50·7	—	—	—	—	—	—	14
„ chronic	0·09	—	0·05	0·4	75·5	0·87	0·87	—	—	0·0	7·0	15
Pyelitis	0·37	0·05	0·19	1·9	87·4	0·87	—	—	—	0·0	9·0	16
Cystitis	0·28	—	0·05	1·5	92·7	—	—	—	0·87	0·7	—	17
Incontinence of urine	1·17	—	0·19	1·3	19·4	0·87	—	—	—	0·0	4·0	18
Albuminuria	0·98	—	0·05	1·3	22·3	—	—	—	—	—	—	19
Hæmaturia	0·14	—	0·05	0·6	68·7	0·87	—	0·87	—	0·1	22·0	20
Other diseases of urinary organs	0·28	—	0·05	0·7	41·1	1·74	—	1·74	—	0·5	88·0	21
TOTAL	**3·45**	**0·14**	**0·70**	**8·1**	**40·1**	**5·23**	**0·87**	**2·62**	**0·87**	**1·3**	**80·0**	
Tumours and Cysts.												
Lipoma	0·09	—	—	0·4	77·0	0·87	—	—	0·87	0·2	64·0	22
Fibroma	0·14	—	—	0·2	22·0	—	—	—	—	—	—	23
Osteoma	0·42	—	0·05	1·0	38·7	—	—	—	—	—	—	24
Papilloma	0·33	—	—	0·3	13·4	—	—	—	—	—	—	25
Other non-malignant growths	0·19	—	—	0·4	32·8	1·74	—	0·87	—	0·2	29·0	26
Sarcoma	0·05	0·05	—	0·2	70·0	—	—	—	—	—	—	27
Cysts	1·07	—	—	1·1	17·4	—	—	—	—	—	—	28
TOTAL	**2·29**	**0·05**	**0·05**	**3·5**	**25·8**	**2·62**	**—**	**0·87**	**0·87**	**0·3**	**40·7**	
Poisons.												
Arsenic (syphilis treatment)	0·14	—	—	0·4	48·3	0·87	—	—	—	0·1	35·0	29
Lead	0·09	—	—	0·1	17·5	—	—	—	—	—	—	30
Mercury	0·05	0·05	—	0·0	4·0	—	—	—	—	—	—	31
Vegetable poisons	0·14	—	—	0·0	5·7	—	—	—	—	—	—	32
Poisonous gases and vapours	0·19	—	—	0·1	4·8	—	—	—	—	—	—	33
Effects of prophylactic inoculation	0·14	—	—	0·0	4·0	—	—	—	—	—	—	34
„ „ alcohol	0·05	—	—	0·0	5·0	—	—	—	—	—	—	35
TOTAL	**0·79**	**0·05**	**—**	**0·6**	**13·9**	**0·87**	**—**	**—**	**—**	**0·1**	**35·0**	

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SICKNESS UNDER GEOGRAPHICAL AREAS—*continued.*

	Egypt—Palestine "Q" and "Z" Forces.						Mesopotamia.						TOTAL.				
	Ratios per 1,000 of Average Annual Strength.				Averages.		Ratios per 1,000 of Average Annual Strength.				Averages.		Ratios per 1,000 of Average Annual Strength.			Averages.	
	Cases.	Deaths.	Invalided to U.K. Finally Invalided.		Constantly Sick.	Duration of Case.	Cases.	Deaths.	Invalided to U.K. Finally Invalided.		Constantly Sick.	Duration of Case.	Cases.	Deaths.	Invalided.	Constantly Sick.	Duration of Case.
1	0·81	—	—	—	0·1	13·5	—	—	—	—	—	—	0·42	—	0·04	1·3	42·5
2	3·25	—	—	—	0·3	13·9	2·30	—	—	—	0·3	46·0	2·47	—	—	3·4	19·2
3	0·81	—	—	—	0·1	17·0	1·15	—	—	—	0·0	8·0	0·58	—	—	0·4	10·6
4	1·22	—	—	—	0·1	11·3	1·15	—	—	—	0·0	3·0	0·96	—	—	0·7	10·8
5	2·03	—	—	—	0·2	14·8	5·76	—	—	—	0·4	28·2	3·28	—	0·12	6·6	28·6
6	1·62	—	—	—	0·2	15·0	—	—	—	—	—	—	1·16	—	—	1·1	13·1
7	0·81	—	—	—	0·1	20·5	—	—	—	—	—	—	1·16	—	0·12	2·0	24·6
8	0·81	—	—	—	0·0	5·0	—	—	—	—	—	—	0·54	—	—	0·4	11·6
9	0·41	—	—	—	0·0	11·0	—	—	—	—	—	—	0·85	—	—	0·9	15·0
10	—	—	—	—	—	—	—	—	—	—	—	—	0·69	—	—	1·2	23·8
11	0·41	—	—	—	0·0	5·0	1·15	—	—	—	0·0	4·0	0·08	—	—	0·0	4·5
12	2·25	—	—	—	0·6	25·6	1·15	—	—	—	0·0	8·0	2·31	—	—	3·2	19·6
13	0·81	—	—	—	0·3	62·5	—	—	—	—	—	—	1·35	—	0·12	4·1	42·4
	15·43	—	—	—	**1·9**	**18·6**	**12·67**	—	—	—	**0·7**	**23·3**	**15·42**	—	**0·35**	**24·1**	**22·0**
14	0·41	—	—	—	0·2	78·0	—	—	—	—	—	—	0·16	0·08	0·08	0·6	57·5
15	0·81	—	0·41	—	0·4	74·0	—	—	—	—	—	—	0·19	0·04	0·04	0·8	61·2
16	—	—	—	—	—	—	—	—	—	—	—	—	0·35	0·04	0·16	1·9	78·7
17	1·22	—	—	—	0·1	9·7	2·30	—	—	—	0·1	14·0	0·42	—	0·08	2·4	79·5
18	0·41	—	—	—	0·0	9·0	—	—	—	—	—	—	1·04	—	0·16	1·4	18·5
19	0·41	—	—	—	0·1	20·0	2·30	—	—	—	0·1	10·5	0·93	—	0·04	1·4	21·2
20	0·41	—	—	—	0·1	19·0	—	—	—	—	—	—	0·19	—	0·04	0·7	49·4
21	1·22	—	—	—	0·2	23·0	2·30	—	—	—	0·2	10·0	0·50	—	0·04	1·6	44·0
	4·87	—	**0·41**	—	**1·0**	**31·0**	**6·91**	—	—	—	**0·4**	**21·5**	**3·78**	**0·16**	**0·62**	**10·8**	**40·3**
22	—	—	—	—	—	—	—	—	—	—	—	—	0·12	—	0·04	0·6	72·7
23	—	—	—	—	—	—	—	—	—	—	—	—	0·12	—	—	0·2	22·0
24	0·41	—	—	—	0·0	13·0	—	—	—	—	—	—	0·39	—	0·04	1·0	36·1
25	—	—	—	—	—	—	1·15	—	—	—	0·0	9·0	0·31	—	—	0·3	12·9
26	—	—	—	—	—	—	—	—	—	—	—	—	0·23	—	—	0·5	31·5
27	—	—	—	—	—	—	—	—	—	—	—	—	0·04	0·04	—	0·2	70·0
28	2·03	—	—	—	0·2	17·2	—	—	—	—	—	—	1·08	—	—	1·3	17·3
	2·44	—	—	—	**0·3**	**16·5**	**1·15**	—	—	—	**0·0**	**9·0**	**2·27**	**0·04**	**0·08**	**4·1**	**25·3**
29	—	—	—	—	—	—	—	—	—	—	—	—	0·16	—	—	0·5	45·0
30	0·41	—	—	—	0·0	5·0	—	—	—	—	—	—	0·12	—	—	0·1	13·3
31	0·41	—	—	—	0·1	27·0	—	—	—	—	—	—	0·08	0·04	—	0·1	15·5
32	—	—	—	—	—	—	—	—	—	—	—	—	0·12	—	—	0·0	5·7
33	—	—	—	—	—	—	—	—	—	—	—	—	0·16	—	—	0·1	4·7
34	—	—	—	—	—	—	—	—	—	—	—	—	0·12	—	—	0·0	4·0
35	0·41	0·41	—	—	0·0	11·0	—	—	—	—	—	—	0·08	0·04	—	0·0	8·0
	1·22	**0·41**	—	—	**0·1**	**14·3**	—	—	—	—	—	—	**0·81**	**0·08**	—	**0·9**	**15·0**

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TABLE II.—Nosological Table showing

Disease.	United Kingdom. Ratios per 1,000 of Average Annual Strength. Cases.	Deaths.	Invalids.	Averages. Constantly Sick.	Duration of Case.	Rest of Europe. Ratios per 1,000 of Average Annual Strength. Cases.	Deaths.	Invalided to U.K.	Finally Invalided.	Averages. Constantly Sick.	Duration of Case.	
Debility	4·47	—	0·09	4·8	18·1	3·49	—	0·87	0·87	0·5	43·3	1
No appreciable disease	5·97	—	—	3·6	10·2	6·10	—	—	—	0·1	4·6	2
TOTAL—ALL DISEASES	399·27	1·68	19·20	585·3	25·0	619·9	6·10	64·51	55·79	79·2	40·8	
General Injuries.												
Burns	0·33	0·09	0·09	1·0	49·7	3·49	—	0·87	1·74	2·6	233·8	3
Scalds	0·00	—	—	0·1	—	—	—	—	—	—	—	4
Sunstroke and heatstroke	—	—	—	—	—	0·87	—	—	—	0·0	5·0	5
Strangulation	0·05	0·05	—	0·0	0·0	—	—	—	—	—	—	6
Drowning	0·19	0·19	—	0·0	0·0	2·62	2·62	—	—	0·0	0·0	7
Multiple minor injuries	1·86	—	—	2·0	18·1	—	—	—	—	—	—	8
„ fractures	0·42	0·28	0·23	2·9	119·6	2·62	1·74	0·87	1·74	1·2	148·0	9
„ wounds	0·09	—	—	0·2	44·0	0·87	—	0·87	—	0·5	179·0	10
Effects of cold	0·09	—	—	0·1	14·5	—	—	—	—	—	—	11
Gunshot wounds	—	—	—	—	—	—	—	—	0·87	0·2	—	12
Starvation	—	—	—	—	—	—	—	—	—	—	—	13
Shock	0·05	—	—	0·0	17·0	—	—	—	—	—	—	14
Unknown	—	—	—	—	—	—	—	—	—	—	—	15
TOTAL	3·08	0·61	0·33	6·4	35·4	10·48	4·36	2·62	4·36	4·4	135·0	
Local Injuries.												
(i) *Head.*												
Contusions and wounds of scalp	1·17	—	—	0·8	11·0	—	—	—	—	—	—	1
Fracture of vault of skull	0·23	0·14	—	0·2	13·0	0·87	0·87	—	—	0·0	0·0	1
„ base of skull	0·23	0·19	—	0·1	8·6	0·87	0·87	—	—	0·0	0·0	1
Concussion	1·96	—	—	1·7	14·8	—	—	—	—	—	—	1
Gunshot wounds	0·14	0·09	—	0·1	10·3	—	—	—	—	—	—	2
TOTAL	3·73	0·42	—	2·8	13·0	1·74	1·74	—	—	0·0	0·0	
(ii) *Face and Mouth.*												
Contusions and wounds of face	2·42	—	—	1·6	11·1	1·74	—	—	—	0·0	5·5	
Fractures	0·51	—	—	3·6	119·3	—	—	—	—	—	—	
Burns	0·47	—	0·09	0·5	19·8	—	—	—	—	—	—	
Gunshot wounds	0·05	—	0·05	0·4	164·0	—	—	—	—	—	—	
TOTAL	3·45	—	0·14	6·1	30·4	1·74	—	—	—	0·0	5·5	
(iii) *Eye.*												
Contusions and wounds of eyelid	0·56	—	—	0·2	7·0	1·74	—	—	—	0·0	5·0	
Burns, eye or eyelid	0·19	—	—	0·1	5·8	—	—	—	—	—	—	
Wounds of conjunctiva	0·19	—	—	0·3	26·2	—	—	—	—	—	—	
Contusions or wounds of eyeball	0·09	—	—	0·1	13·0	1·74	—	0·87	—	0·2	43·5	
Foreign bodies in eye	0·14	—	0·05	0·1	14·0	—	—	—	—	—	—	
Abrasions of cornea	0·33	—	—	0·2	9·7	—	—	—	—	—	—	
TOTAL	1·49	—	0·05	1·0	10·9	3·49	—	0·87	—	0·3	24·2	

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SICKNESS UNDER GEOGRAPHICAL AREAS—*continued.*

	Egypt—Palestine, "Q" and "Z" Forces.						Mesopotamia.						TOTAL.				
	Ratios per 1,000 of Average Annual Strength.				Averages.		Ratios per 1,000 of Average Annual Strength.				Averages.		Ratios per 1,000 of Average Annual Strength.			Averages.	
	Cases.	Deaths.	Invalided to U.K.	Finally Invalided	Constantly Sick.	Duration of Case.	Cases.	Deaths.	Invalided to U.K.	Finally Invalided.	Constantly Sick.	Duration of Case.	Cases.	Deaths.	Invalided.	Constantly Sick.	Duration of Case.
1	10·15	—	—	—	0·6	8·2	23·04	—	1·15	—	1·3	23·8	5·59	—	0·12	7·1	18·0
2	4·87	—	—	—	0·3	9·4	10·37	—	—	—	0·2	8·2	6·01	—	—	4·2	9·8
	747·46	2·84	17·46	9·74	142·2	28·3	1394·01	3·46	14·98	2·30	46·7	14·1	475·24	2·04	19·35	353·4	25·3
3	3·25	0·81	—	—	0·4	17·9	4·61	—	—	—	0·5	48·7	0·89	0·16	0·16	4·4	70·5
4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0·1	—
5	9·74	—	—	—	0·5	8·0	64·52	2·30	1·15	—	2·1	13·7	3·12	0·08	—	2·6	11·9
6	0·41	0·41	—	—	0·0	0·0	—	—	—	—	—	—	0·08	0·08	—	0·0	0·0
7	0·81	0·81	—	—	0·0	0·0	2·30	2·30	—	—	0·0	0·0	0·42	0·42	—	0·0	0·0
8	2·84	—	—	—	0·2	9·7	1·15	—	—	—	0·0	7·0	1·85	—	—	2·2	16·6
9	2·84	2·84	—	0·41	0·7	37·6	3·46	3·46	—	—	0·0	0·0	0·85	0·69	0·31	4·9	81·0
10	0·41	—	0·41	0·41	0·6	218·0	2·30	2·30	—	1·15	0·3	56·0	0·23	0·08	0·08	1·6	99·5
11	—	—	—	—	—	—	—	—	—	—	—	—	0·08	—	—	0·1	14·5
12	—	—	—	—	—	—	1·15	1·15	—	—	0·0	0·0	0·04	0·04	0·04	0·2	57·0
13	0·81	0·81	—	—	0·0	0·0	—	—	—	—	—	—	0·08	0·08	—	0·0	0·0
14	—	—	—	—	—	—	—	—	—	—	—	—	0·04	—	—	0·0	17·0
15	—	—	—	—	—	—	2·30	2·30	—	—	0·0	0·0	0·08	0·08	—	0·0	0·0
	21·11	5·68	0·41	0·81	2·4	17·1	81·79	13·83	1·15	1·15	3·0	15·3	7·75	1·66	0·58	16·0	29·4
16	3·25	—	—	—	0·3	13·8	1·15	—	—	—	0·0	2·0	1·31	—	—	1·1	11·4
17	—	—	—	—	—	—	1·15	1·15	—	—	0·0	0·0	0·27	0·19	—	0·2	9·3
18	—	—	—	—	0·2	—	1·15	1·15	—	—	0·0	0·0	0·27	0·23	—	0·3	17·4
19	—	—	—	—	—	—	—	—	—	—	—	—	1·62	—	—	1·7	14·8
20	0·81	0·41	—	—	0·1	13·0	—	—	—	—	—	—	0·19	0·12	—	0·2	11·4
	4·06	0·41	—	—	0·6	21·5	3·46	2·30	—	—	0·0	0·7	3·66	0·54	—	3·4	13·2
21	3·25	—	—	—	0·3	11·8	3·46	—	—	—	0·1	8·0	2·51	—	—	1·9	10·9
22	0·41	—	—	—	0·0	5·0	—	—	—	—	—	—	0·46	—	—	3·6	109·8
23	1·22	—	—	—	0·2	26·0	1·15	—	—	—	0·0	9·0	0·54	—	0·08	0·8	20·4
24	—	—	—	—	—	—	1·15	—	—	—	0·2	72·0	0·08	—	0·04	0·6	118·0
	4·87	—	—	—	0·5	14·7	5·76	—	—	—	0·3	21·0	3·59	—	0·12	7·0	27·4
25	—	—	—	—	—	—	1·15	—	—	—	0·1	51·0	0·58	—	—	0·4	9·7
26	0·41	—	—	—	0·0	10·0	—	—	—	—	—	—	0·19	—	—	0·	6·6
27	—	—	—	—	—	—	—	—	—	—	—	—	0·16	—	—	0·3	26·2
28	0·81	—	—	—	0·2	30·0	—	—	—	—	—	—	0·23	—	—	0·5	28·8
29	1·62	—	—	—	0·1	6·0	1·15	—	—	—	0·0	9·0	0·31	—	0·04	0·2	9·4
30	0·41	—	—	—	0·0	10·0	—	—	—	—	—	—	0·31	—	—	0·2	9·8
	3·25	—	—	—	0·3	13·0	2·30	—	—	—	0·2	30·0	1·77	—	0·04	1·7	13·2

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TABLE II.—Nosological Table showing

Local Injuries.	United Kingdom.					Rest of Europe.						
	Ratios per 1,000 of Average Annual Strength.			Averages.		Ratios per 1,000 of Average Annual Strength.				Averages.		
	Cases.	Deaths.	Invalids.	Constantly Sick.	Duration of Case.	Cases.	Deaths.	Invalided to U.K.	Finally Invalided.	Constantly Sick.	Duration of Case.	
(iv) *Ear*	0·19	—	—	0·1	13·0	—	—	—	—	—	—	1
(v) *Neck.*												
Contusions	—	—	—	—	—	0·87	—	—	—	0·0	4·0	2
Cut throat	0·09	0·05	—	0·0	9·0	—	—	—	—	—	—	3
Burns	0·09	—	—	0·0	8·5	—	—	—	—	—	—	4
TOTAL	0·19	0·05	—	0·1	8·8	0·87	—	—	—	0·0	4·0	
(vi) *Chest.*												
Contusions	0·33	—	—	0·5	28·1	—	—	—	—	—	—	5
Fracture of ribs, including injuries to chest contents	0·65	—	—	1·2	30·1	—	—	—	—	—	—	6
Fracture of sternum	0·05	—	—	0·1	32·0	—	—	—	—	—	—	7
Penetrating wound of lung	0·05	—	—	0·1	21·0	—	—	—	—	—	—	8
Gunshot wounds	—	—	—	—	—	—	—	—	—	—	—	9
TOTAL	1·07	—	—	1·8	29·2	—	—	—	—	—	—	
(vii) *Back.*												
Contusions and wounds	1·03	—	—	0·5	8·0	2·62	—	—	—	0·1	7·0	10
Sprains	0·65	—	—	0·4	10·0	0·87	—	—	—	0·0	13·0	11
Fracture of spine	—	—	—	—	—	—	—	—	—	—	—	12
Fracture dislocation of spine	0·05	—	0·05	0·3	103·0	—	—	—	—	—	—	13
Gunshot wounds	—	—	—	—	—	—	—	—	—	—	—	14
TOTAL	1·72	—	0·05	1·1	11·3	3·49	—	—	—	0·1	8·5	
(vii) *Abdomen.*												
Contusions and sprain of muscle	0·47	—	—	0·3	12·8	0·87	—	—	—	0·1	51·0	15
Contusion (with rupture) of viscera	—	—	0·05	0·2	—	—	—	—	—	—	—	16
Contusion of viscera	0·14	—	—	0·3	33·3	—	—	—	—	—	—	17
Gunshot wounds	—	—	—	—	—	—	—	—	—	—	—	18
TOTAL	0·61	—	0·05	0·8	22·5	0·87	—	—	—	0·1	51·0	
(ix) *Pelvis and Organs of Generation.*												
Contusions and wounds of generative organs	0·93	—	—	1·3	23·2	1·74	—	—	0·87	0·8	153·5	1
Fracture of pelvis	0·05	—	0·05	1·3	348·0	—	—	—	—	—	—	2
TOTAL	0·98	—	0·05	2·5	46·0	1·74	—	—	0·87	0·8	153·5	
(x) *Upper Extremity.*												
Contusions and abrasions: hand and wrist	0·75	—	—	0·6	13·3	—	—	—	—	—	—	
" " rest of limb	1·40	—	—	1·1	13·6	3·49	—	—	—	0·1	12·2	
Sprain: wrist	0·98	—	—	0·8	13·3	1·74	—	—	—	0·0	5·5	
Other sprains	0·42	—	—	0·3	10·2	0·87	—	—	—	0·0	3·0	
Wounds: hand and wrist	4·85	—	0·05	5·5	19·5	6·97	—	0·87	0·87	0·6	26·4	
" rest of limb	0·51	—	—	0·4	12·6	—	—	—	—	—	—	

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SICKNESS UNDER GEOGRAPHICAL AREAS—*continued.*

	Egypt—Palestine "Q" and "Z" Forces.						Mesopotamia.						TOTAL.				
	Ratios per 1,000 of Average Annual Strength.				Averages.		Ratios per 1,000 of Average Annual Strength.				Averages.		Ratios per 1,000 of Average Annual Strength.			Averages.	
	Cases.	Deaths.	Invalided to U.K.	Finally Invalided.	Constantly Sick.	Duration of Case.	Cases.	Deaths.	Invalided to U.K.	Finally Invalided.	Constantly Sick.	Duration of Case.	Cases.	Deaths.	Invalided.	Constantly Sick.	Duration of Case.
1	—	—	—	—	—	—	—	—	—	—	—	—	0·16	—	—	0·1	13·0
2	—	—	—	—	—	—	1·15	—	—	—	0·0	3·0	0·08	—	—	0·0	3·5
3	—	—	—	—	—	—	—	—	—	—	—	—	0·08	0·04	—	0·0	9·0
4	—	—	—	—	—	—	—	—	—	—	—	—	0·08	—	—	0·0	8·5
	—	—	—	—	—	—	1·15	—	—	—	0·0	3·0	0·23	0·04	—	0·1	7·0
5	—	—	—	—	—	—	1·15	—	—	—	0·0	13·0	0·31	—	—	0·6	26·3
6	0·81	0·41	—	—	0·1	18·0	1·15	—	—	—	0·0	18·0	0·66	0·04	—	1·3	27·9
7	—	—	—	—	—	—	—	—	—	—	—	—	0·04	—	—	0·1	32·0
8	—	—	—	—	—	—	—	—	—	—	—	—	0·04	—	—	0·1	21·0
9	0·41	0·41	—	—	0·0	0·0	—	—	—	—	—	—	0·04	0·04	—	0·0	0·0
	1·22	0·81	—	—	0·1	12·0	2·30	—	—	—	0·1	15·5	1·08	0·08	—	2·0	26·4
10	0·41	—	—	—	0·0	5·0	—	—	—	—	—	—	1·00	—	—	0·6	7·7
11	—	—	—	—	—	—	1·15	—	—	—	0·0	3·0	0·62	—	—	0·4	9·8
12	1·22	0·41	0·41	—	0·2	19·0	—	—	—	—	—	—	0·12	0·04	—	0·2	19·0
13	—	—	—	—	—	—	—	—	—	—	—	—	0·04	—	0·04	0·3	103·0
14	0·41	—	—	—	0·1	33·0	1·15	—	—	—	0·2	59·0	0·08	—	—	0·3	46·0
	2·03	0·41	0·41	—	0·3	19·0	2·30	—	—	—	0·2	31·0	1·86	0·04	0·04	1·7	12·7
15	—	—	—	—	—	—	—	—	—	—	—	—	0·42	—	—	0·5	16·3
16	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0·04	0·2	—
17	—	—	—	—	—	—	—	—	—	—	—	—	0·12	—	—	0·3	33·3
18	0·41	—	—	—	0·4	137·0	—	—	—	—	—	—	0·04	—	—	0·4	137·0
	0·41	—	—	—	0·4	137·0	—	—	—	—	—	—	0·58	—	0·04	1·3	32·1
19	0·81	—	—	—	0·0	8·5	1·15	—	—	—	0·0	12·0	0·96	—	0·04	2·2	32·0
20	—	—	—	—	—	—	—	—	—	—	—	—	0·04	—	0·04	1·3	366·0
	0·81	—	—	—	0·0	8·5	1·15	—	—	—	0·0	12·0	1·00	—	0·08	3·4	48·5
21	1·22	—	—	—	0·0	6·0	4·61	—	—	—	0·1	11·7	0·89	—	—	0·8	12·1
22	1·22	—	—	—	0·0	4·7	5·76	—	—	—	0·3	22·0	1·62	—	—	1·6	13·9
23	0·81	—	—	—	0·1	14·0	1·15	—	—	—	0·0	4·0	1·00	—	—	0·9	12·4
24	1·22	—	—	—	0·4	49·3	—	—	—	—	—	—	0·50	—	—	0·7	18·7
25	2·44	—	—	—	0·2	14·8	13·83	—	—	1·15	0·8	23·7	5·01	—	0·12	7·2	20·1
26	1·22	—	—	—	0·2	25·3	1·15	—	—	—	0·1	39·0	0·58	—	—	0·7	16·9

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TABLE II.—Nosological Table showing

Local Injuries.	United Kingdom. Ratios per 1,000 of Average Annual Strength. Cases.	Deaths.	Invalids.	Averages. Constantly Sick.	Duration of Case.	Rest of Europe. Ratios per 1,000 of Average Annual Strength. Cases.	Deaths.	Invalided to U.K.	Finally Invalided.	Averages. Constantly Sick.	Duration of Case.	
(x) *Upper Extremities*—continued.												
Wounds, involving severed arteries	0·05	—	—	0·1	54·0	—	—	—	—	—	—	1
„ , involving joint	0·05	—	0·09	0·4	145·0	0·87	—	0·87	0·87	0·7	258·0	2
Fracture, involving joint	0·09	—	0·09	1·5	268·5	—	—	—	—	—	—	3
„ , of scapula	0·05	—	—	0·0	11·0	—	—	—	—	—	—	4
„ , of clavicle	1·12	—	—	1·7	26·4	0·87	—	—	—	0·0	5·0	5
„ , of humerus	0·42	—	0·14	3·2	129·4	1·74	—	—	—	0·2	44·0	6
„ , of radius	0·23	—	—	0·8	58·6	—	—	—	—	—	—	7
„ , of radius (lower third)	2·75	—	0·14	7·1	43·9	5·23	—	0·87	—	0·6	39·3	8
„ , of ulna	0·23	—	—	0·8	56·0	—	—	—	—	—	—	9
„ , of radius and ulna	0·37	—	0·05	2·6	129·4	—	—	—	—	—	—	10
„ , of carpus, metacarpus or phalanges	0·61	—	0·05	1·0	27·5	0·87	—	—	—	0·0	15·0	11
Dislocation of clavicle	0·19	—	—	0·1	10·5	—	—	—	—	—	—	12
„ of shoulder joint	0·28	—	—	1·4	85·0	—	—	—	—	—	—	13
„ of elbow	0·33	—	—	0·4	19·3	—	—	—	0·87	0·2	—	14
„ of wrist	0·09	—	—	0·1	24·5	—	—	—	—	—	—	15
„ of carpus, metacarpus or phalanges	0·33	—	—	0·4	19·7	0·87	—	—	—	0·0	4·0	16
Gunshot wounds without fracture	—	—	—	—	—	0·87	—	—	—	0·0	7·0	17
„ „ with fracture	—	—	—	—	—	0·87	—	—	—	0·1	22·0	18
„ „ involving joint	—	—	—	—	—	—	—	—	—	—	—	19
Burns	0·65	—	—	0·7	19·3	1·74	—	—	—	0·2	29·0	20
Scalds	0·19	—	—	0·1	10·5	—	—	—	—	—	—	21
TOTAL	**16·94**	**—**	**0·61**	**31·1**	**31·4**	**27·03**	**—**	**2·62**	**2·62**	**2·8**	**33·5**	
(xi) *Lower Extremity.*												
Contusions and abrasions, foot and ankle	5·50	—	—	3·6	11·0	3·49	—	—	—	0·1	5·2	22
„ „ , rest of limb	4·01	—	—	3·2	13·8	6·10	—	—	—	0·1	7·3	23
Sprain, ankle	7·69	—	—	5·6	12·4	9·59	—	—	—	0·5	16·2	24
„ , knee	0·75	—	—	0·4	9·2	1·74	—	—	—	0·0	7·0	25
„ , knee involving slipped cartilage	0·93	—	0·09	3·7	67·8	0·87	—	—	—	0·0	4·0	26
„ , foot	0·14	—	—	0·2	20·7	—	—	—	—	—	—	27
Wounds, foot and ankle	1·17	—	—	0·8	12·3	4·36	—	—	0·87	0·3	22·6	28
„ , rest of limb	1·35	—	—	1·1	14·3	1·74	—	0·87	—	0·2	40·5	29
„ , involving joint	—	—	0·09	0·6	—	—	—	—	—	—	—	30
Fracture, involving joint	0·05	—	0·05	0·5	181·0	—	—	—	—	—	—	31
„ , shaft of femur	0·19	—	0·09	2·0	183·2	—	—	—	—	0·8	—	32
„ , patella	0·14	—	0·05	0·9	105·0	—	—	—	—	—	—	33
„ , tibia	0·19	—	—	2·3	211·5	0·87	—	—	—	0·3	104·0	34
„ , fibula	1·12	—	—	2·8	42·6	2·62	—	1·74	—	0·8	91·7	35
„ , tibia and fibula	0·19	—	0·09	2·6	234·8	1·74	—	0·87	3·49	2·3	366·6	36
Fracture of tarsus, metatarsus or phalanges	0·47	—	0·09	1·8	61·6	1·74	—	—	—	0·1	23·0	37
Dislocation of patella	0·09	—	—	0·0	8·5	—	—	—	—	—	—	38
„ of tarsus, metatarsus or phalanges	0·19	—	—	0·5	51·8	—	—	—	—	—	—	39
Gunshot wounds without fracture	0·14	—	—	0·3	35·7	—	—	—	0·87	0·6	—	40
„ „ with fracture	—	—	0·05	0·8	—	0·87	—	0·87	3·49	0·5	169·0	41
„ „ involving joint	—	—	—	—	—	0·87	—	0·87	—	0·2	56·0	42

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Sickness under Geographical Areas—*continued.*

	Egypt—Palestine, "Q" and "Z" Forces.						Mesopotamia.						Total.				
	Ratios per 1,000 of Average Annual Strength.				Averages.		Ratios per 1,000 of Average Annual Strength.				Averages.		Ratios per 1,000 of Average Annual Strength.			Averages.	
	Cases.	Deaths.	Invalided to U.K.	Finally Invalided.	Constantly Sick.	Duration of Case.	Cases.	Deaths.	Invalided to U.K.	Finally Invalided.	Constantly Sick.	Duration of Case.	Cases.	Deaths.	Invalids.	Constantly Sick.	Duration of Case.
1	—	—	—	—	—	—	1·15	—	—	—	0·0	4·0	0·08	—	—	0·2	29·0
2	—	—	—	—	—	—	—	—	—	1·15	0·4	—	0·08	—	0·15	1·5	267·0
3	—	—	—	—	—	—	—	—	—	—	—	—	0·08	—	0·08	1·5	268·5
4	—	—	—	—	—	—	—	—	—	—	—	—	0·04	—	—	0·0	11·0
5	0·41	—	—	—	0·1	48·0	1·15	—	—	—	0·1	30·0	1·04	—	—	2·0	26·6
6	0·81	—	—	—	0·3	50·0	1·15	—	—	—	0·1	52·0	0·54	—	0·12	3·8	100·4
7	0·41	—	—	—	0·1	35·0	—	—	—	—	—	—	0·23	—	—	0·9	54·7
8	5·09	—	—	—	1·6	39·1	2·30	—	—	—	0·1	15·5	3·16	—	0·12	9·4	42·0
9	—	—	—	—	—	—	2·30	—	—	—	0·1	12·5	0·27	—	—	0·8	43·6
10	—	—	—	—	—	—	1·15	—	—	—	0·4	145·0	0·35	—	0·04	3·1	124·7
11	—	—	—	—	—	—	—	—	—	—	—	—	0·54	—	0·04	1·0	26·6
12	—	—	—	—	—	—	—	—	—	—	—	—	0.16	—	—	0·1	10·5
13	—	—	—	—	—	—	—	—	—	—	—	—	0·23	—	—	1·4	85·0
14	0·41	—	0·41	—	0·9	314·0	—	—	—	—	—	—	0·35	—	0·04	1·4	56·3
15	—	—	—	—	—	—	1·15	—	—	—	0·1	21·0	0·12	—	—	0·2	23·3
16	—	—	—	—	—	—	—	—	—	—	—	—	0·31	—	—	0·4	17·7
17	0·41	—	—	—	0·0	4·0	—	—	—	—	—	—	0·08	—	—	0·0	5·5
18	—	—	—	—	—	—	1·15	—	1·15	—	0·3	117·0	0·08	—	—	0·4	69·5
19	0·41	—	—	—	0·3	114·0	—	—	—	—	—	—	0·04	—	—	0·3	114·0
20	2·44	—	—	—	0·5	29·8	10·34	—	—	—	0·6	23·3	1·20	—	—	2·0	23·1
21	—	—	—	—	—	—	—	—	—	—	—	—	0·16	—	—	0·1	10·5
	19·49	—	0·41	—	4·8	36·5	48·39	—	1·15	2·30	3·4	29·8	18·69	—	0·69	42·1	31·8
22	5·68	—	—	—	0·5	12·9	5·76	—	—	—	0·1	6·6	5·43	—	—	4·3	11·3
23	8·12	—	—	—	0·5	9·7	11·52	—	—	—	0·2	8·3	4·75	—	—	4·1	12·3
24	3·25	—	—	—	0·3	15·0	10·37	—	1·15	—	0·3	10·3	7·44	—	—	6·8	12·6
25	—	—	—	—	—	—	—	—	—	—	—	—	0·69	—	—	0·4	8·9
26	—	—	—	—	—	—	1·15	—	—	—	0·0	3·0	0·85	—	0·08	3·7	61·9
27	0·41	—	—	—	0·0	7·0	—	—	—	—	—	—	0·16	—	—	0·2	17·3
28	2·44	—	—	—	0·3	16·3	2·30	—	—	—	0·2	38·0	1·46	—	0·04	1·6	15·6
29	5·68	—	0·41	0·41	1·4	37·3	9·22	—	—	—	0·6	26·5	2·04	—	0·04	3·4	23·2
30	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0·08	0·6	—
31	0·41	—	0·41	0·41	0·4	158·0	—	—	—	—	—	—	0·08	—	0·08	0·9	169·5
32	—	—	—	—	—	—	—	—	—	—	—	—	0·16	—	0·08	2·8	258·0
33	—	—	—	—	—	—	—	—	—	—	—	—	0·12	—	0.04	0·9	105·0
34	0·41	—	—	—	0·3	116·0	—	—	—	—	—	—	0·23	—	—	2·9	177·7
35	0·81	—	—	—	0·4	72·5	—	—	—	—	—	—	1·12	—	—	3·9	49·7
36	0·81	—	—	—	0·8	138·0	1·15	—	1·15	1·15	0·7	258·0	0·34	—	0·27	6·4	258·4
37	—	—	—	—	—	—	—	—	—	—	—	—	0·46	—	0·08	1·9	57·7
38	—	—	—	—	—	—	—	—	—	—	—	—	0·08	—	—	0·0	8·5
39	—	—	—	—	—	—	—	—	—	—	—	—	0·16	—	—	0·6	51·8
40	—	—	—	—	—	—	—	—	—	—	—	—	0·19	—	0·04	1·3	98·6
41	0·41	—	—	—	—	—	2·30	—	—	—	0·4	83·0	0·12	—	0·23	2·2	270·0
42	—	—	0·41	0·41	0·9	344·0	1·15	—	—	—	0·0	16·0	0·04	—	—	0·2	56·0

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TABLE II.—Nosological Table showing

Local Injuries.	United Kingdom. Ratios per 1,000 of Average Annual Strength. Cases.	Deaths.	Invalids.	Averages. Constantly Sick.	Duration of Case.	Rest of Europe. Ratios per 1,000 of Average Annual Strength. Cases.	Deaths.	Invalided to U.K.	Finally Invalided.	Averages. Constantly Sick.	Duration of Case.	
Lower Extremity—continued.												
Burns	0·14	—	0·09	0·9	110·0	1·74	—	—	—	0·1	13·5	1
Scalds	0·37	—	—	0·6	28·0	1·74	—	—	—	0·0	5·0	2
Injury to muscles	0·89	—	—	0·9	16·5	—	—	—	—	—	—	3
Synovitis knee, acute traumatic	8·72	—	—	8·8	17·2	9·59	—	0·87	0·87	0·7	24·2	4
Total: Lower Extremity	**34·43**	**—**	**0·70**	**44·9**	**22·3**	**49·69**	**—**	**6·10**	**9·59**	**7·6**	**48·9**	
Total: Local Injuries	**64·74**	**0·47**	**1·63**	**92·5**	**24·4**	**90·67**	**1·74**	**9·59**	**13·08**	**11·8**	**41·6**	
Total: All Injuries	**67·82**	**1·07**	**1·96**	**98·8**	**24·9**	**101·13**	**6·10**	**12·20**	**17·44**	**16·3**	**51·3**	
Total: All Diseases	**399·27**	**1·68**	**19·20**	**585·3**	**25·0**	**619·9**	**6·10**	**64·51**	**55·79**	**79·2**	**40·8**	
Total: All Disabilities	**467·0**	**2·75**	**21·16**	**684·2**	**25·0**	**721·00**	**12·20**	**76·72**	**73·23**	**95·4**	**42·2**	

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Sickness under Geographical Areas—*continued.*

	Egypt—Palestine "Q" and "Z" Forces.						Mesopotamia.						Total.				
	Ratios per 1,000 of Average Annual Strength.				Averages.		Ratios per 1,000 of Average Annual Strength.				Averages.		Ratios per 1,000 of Average Annual Strength.			Averages.	
	Cases.	Deaths.	Invalided to U.K.	Finally Invalided.	Constantly Sick.	Duration of Case.	Cases.	Deaths.	Invalided to U.K.	Finally Invalided.	Constantly Sick.	Duration of Case.	Cases.	Deaths.	Invalids.	Constantly Sick.	Duration of Case.
1	6·81	—	—	—	0·3	52·5	1·15	—	—	—	0·0	12·0	0·31	—	0·08	1·3	59·3
2	1·22	—	—	—	0·2	19·3	2·30	—	—	—	0·1	22·5	0·58	—	—	0·9	22·5
3	—	—	—	—	—	—	1·15	—	—	—	0·0	13·0	0·77	—	—	0·9	16·3
4	8·59	—	0·41	—	1·1	19·5	1·15	—	1·15	—	0·1	52·0	8·48	—	0·04	10·8	17·9
	38·98	—	1·62	1·22	7·5	28·5	50·69	—	3·46	1·15	2·9	24·1	36·04	—	1·16	63·0	24·7
	75·11	1·62	2·44	1·22	14·4	28·5	117·51	2·30	4·61	3·46	7·1	25·4	68·62	0·69	2·16	125·9	25·9
	96·22	7·31	2·84	2·03	16·8	26·0	199·31	16·13	5·76	4·61	10·0	21·2	76·37	2·39	2·74	142·0	26·2
	747·46	2·84	17·46	9·74	142·2	28·3	1394·01	3·46	14·98	2·30	46·7	14·1	475·24	2·04	19·35	853·4	25·3
	843·68	10·15	20·30	11·77	158·8	28·0	1593·4	19·59	20·73	6·91	56·7	15·0	551·8	4·43	22·09	995·2	25·5

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CHAPTER II.

THE HEALTH OF THE ROYAL AIR FORCE IN THE UNITED KINGDOM DURING 1920.

Section I.—General.

Table VII. shows details of sickness under Commands. Halton and Cranwell differ from other Commands in that they consist of a number of units concentrated at one station. In addition to the 454 invalids shown in this table, who were discharged through Navy, Army or R.A.F. hospitals on the termination of illness, a further 3,654 airmen were discharged from the service on medical grounds on the findings of the Pensions Board at the R.A.F. Depôt. Consisting, as they did, mainly of men of low medical category who were enlisted during the war or shortly afterwards, before the standard of medical fitness for service was raised, or who were suffering from sickness or injury attributable to the war, they constitute a factor which will not normally recur. Detailed medical causes of discharge of this group will be found in Table X, page 48. These cases are excluded from the Nosological Table in Chapter I., page 20.

Table VIII. shows the relative proportions of sickness occurring in R.A.F. sick quarters and hospitals respectively. The reason for the omission of sick quarter rates of sickness at Halton and Cranwell is that the R.A.F. hospitals there function also as station sick quarters. The hospital treatment in the other Commands occurred mainly in military, and to a much less extent in naval and civil hospitals.

The relatively high case incidence and the relatively low average duration per case at Cranwell is principally due to the presence of boys at this station whose average age was 15–16 years, and their consequent admission for trivial ailments, which would not occur in the case of men.

Owing to the relatively large amount of sickness at the R.A.F. Depôt at Uxbridge attributable to special causes enumerated below, the total figures for the Inland Area hardly give a fair picture of the sick rates obtaining at the average station. The Inland Area figures have therefore also been shown after deduction of the Uxbridge numbers.

The Uxbridge Depôt performs three main functions—

(1) It is the place of reception of all Royal Air Force recruits.

(2) It is the place of concentration of all Royal Air Force drafts for overseas, and where inoculations and vaccinations are carried out.

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Table VII.—Analysis of Sickness in Commands of the United Kingdom.

1920.

Command.	Average Strength (All Ranks).	No. of Fresh Cases of Sickness occurring during the Year.			No. of Deaths.	No. of Invalids.	Average Constantly Sick.		Average Duration of Case.		Average Sickness per Individual.		Ratios per 1,000 of Strength.					
													Cases of Sickness.		Deaths.	Invalids.	Average constantly Sick.	
		Less than 48 Hours.	More than 48 Hours.	Total.			Including 48-hour Cases.	Excluding 48-hour Cases.	Including 48-hour Cases.	Excluding 48-hour Cases.	Including 48-hour Cases.	Excluding 48-hour Cases.	Including 48-hour Cases.	Excluding 48-hour Cases.			Including 48-hour Cases.	Excluding 48-hour Cases.
Inland (including Air Ministry).	11,396	5,696	5,345	11,041	31	281	431·7	409·5	14·3	28·0	13·9	13·2	968·8	469·0	2·7	24·7	37·9	35·9
Coastal - - -	3,657	1,342	1,641	2,983	8	63	101·5	95·7	12·5	21·3	10·2	9·6	815·7	448·7	2·2	17·2	27·7	26·2
Halton - - -	4,316	782	1,847	2,629	11	91	118·8	115·7	16·5	22·9	10·1	9·8	609·1	427·9	2·6	21·1	27·5	26·8
Cranwell - - -	1,335	270	847	1,117	2	10	39·3	38·1	12·9	16·5	10·8	10·4	836·8	634·5	1·5	7·5	29·5	28·5
Ireland - - -	750	88	341	429	7	9	25·7	25·3	21·9	27·1	12·5	12·3	572·0	454·7	9·3	12·0	34·2	33·7
TOTAL - -	21,454	8,178	10,021	18,199	59	454	716·9	684·2	14·4	25·0	12·2	11·7	848·2	467·0	2·8	21·2	33·4	31·9

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TABLE VIII.—ANALYSIS OF SICKNESS IN UNITED KINGDOM COMMANDS, SHOWING THE NUMBER OF CASES AND LENGTH OF TREATMENT IN SICK QUARTERS AND HOSPITAL RESPECTIVELY.

Command.	Average Strength (all Ranks).	No. of Cases of Sickness.					Average Duration per Case.				Average Constantly Sick.				Average Constantly Sick per 1,000 of Strength.			
		In Sick Quarters.			In Hospital.	Total.	In Sick Quarters.	In Hospital.	Total.		In Sick Quarters.	In Hospital.	Total.		In Sick Quarters.	In Hospital.	Total.	
		Less than 48 Hours.	More than 48 Hours.	Total.					Including 48-hour Cases.	Excluding 48-hour Cases.			Including 48-hour Cases.	Excluding 48-hour Cases.			Including 48-hour Cases.	Excluding 48-hour Cases.
Inland (including Air Ministry).	11,396	5,696	2,827	8,523	3,079	11,041	3·7	41·1	14·3	28·0	86·3	345·4	431·7	409·5	7·6	30·3	37·9	35·9
Coastal	3,057	1,342	1,132	2,474	702	2,983	4·7	36·2	12·5	21·3	32·6	69·5	101·5	95·7	8·8	19·0	27·8	26·2
Ireland	750	88	147	235	246	429	5·0	33·4	21·9	27·1	3·2	22·4	25·7	25·3	4·3	29·9	34·2	33·7
TOTAL	15,803	7,126	4,106	11,232	4,027	14,453	4·0	39·8	14·2	26·5	121·5	437·3	558·8	530·5	7·7	27·7	35·4	33·6
Halton	4,316	782	(c)	—	(d) 1,847	2,629	—	—	16·5	22·9	—	—	118·8	115·7	—	—	27·5	26·8
Cranwell	1,335	270	(c)	—	(d)847	1,117	—	—	12·9	16·5	—	—	39·3	38·1	—	—	29·5	28·5
TOTAL	5,651	1,052	—	—	2,694 (d)	3,746	—	—	15·5	20·9	—	—	158·0	153·7	—	—	28·0	27·2
GRAND TOTAL (UNITED KINGDOM).	21,454	8,178	—	—	—	18,199	—	—	14·4	25·0	—	—	716·9	684·2	—	—	33·4	31·9
Inland Area (excluding Uxbridge).	9,555	4,003	2,244	6,247	2,415	8,204	3·9	39·4	14·6	27·1	66·8	259·7	326·5	310·5	7·0	27·2	34·2	32·5

(c) included in (d).

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(3) It is the place where all men before discharge from the service, other than as invalids through the hospitals, concentrate for completion of their papers.

The presence of a large number of men of low medical category as a war legacy has naturally tended to swell the sickness figures for the station.

Table IX. shows sickness in sick quarters and hospitals for the principal air stations in the United Kingdom :—

Station.	Average Annual Strength.	Average Duration of Case.		Average Constantly Sick.				Ratios per 1,000 of Average Annual Strength.							
								Cases.		Deaths.	Invalids.	Constantly Sick.			
		Sick Quarters.	Total.	In Sick Quarters.	In Hospitals.	Total.						In Sick Quarters.	In Hospital.	Total.	
						Including 48-hour Cases.	Excluding 48-hour Cases.	Including 48-hour Cases.	Excluding 48-hour Cases.					Including 48-hour Cases.	Excluding 48-hour Cases.
(a) INLAND AREA.															
Andover	270	3·8	14·5	1·5	7·5	9·0	8·7	837·0	533·2	—	14·8	5·7	27·5	33·2	32·2
Blandford	473	4·5	12·6	3·8	9·2	13·0	11·9	799·1	367·8	—	16·9	8·0	19·4	27·4	25·2
Croydon and Kenley.	577	2·8	13·1	1·3	7·4	8·7	8·2	639·3	318·3	13·3	10·6	3·5	19·6	23·1	21·8
Duxford and Fowlmere.	284	2·1	9·3	2·7	10·2	12·9	11·3	1781·6	369·7	—	7·0	9·5	33·9	45·4	39·8
Farnborough	404	4·4	12·9	2·5	9·2	11·7	11·1	816·7	502·4	—	14·8	6·2	22·8	29·0	27·5
Flowerdown	785	5·2	15·6	6·3	17·2	23·5	22·6	704·4	414·0	1·3	3·8	8·0	21·9	29·9	28·8
Henlow	1,091	3·2	9·2	9·8	23·2	33·0	30·0	1205·2	534·4	0·9	12·8	9·0	21·3	30·3	27·5
Manston	772	5·3	12·1	8·4	15·1	23·5	22·3	920·7	466·2	3·9	3·9	10·9	19·6	30·5	28·9
Martlesham	289	8·4	24·1	2·5	7·5	10·0	9·9	522·5	460·2	3·5	10·4	8·6	26·0	34·6	34·3
Netheravon	508	3·1	13·3	3·2	17·5	20·7	19·7	1125·7	572·7	2·0	23·6	6·3	34·4	40·7	38·8
Shotwick	326	2·4	13·9	2·3	15·2	17·5	16·1	1410·8	515·3	—	9·2	7·1	40·6	53·7	49·4
Shrewsbury	372	3·7	10·9	3·8	8·5	12·3	11·4	1112·8	493·8	—	5·4	10·3	22·8	33·1	30·6
Spittlegate	358	5·9	19·1	2·2	6·9	9·1	8·9	488·8	316·3	—	8·4	6·1	19·3	25·4	24·9
Stonehenge and Worthy Down.	236	3·0	18·7	0·6	5·0	5·6	5·5	466·1	283·9	4·2	25·4	2·5	21·2	23·7	23·3
Upavon	288	2·1	16·1	0·7	8·0	8·7	8·2	691·0	316·0	—	20·8	2·4	27·8	30·2	28·5
Uxbridge	1,840	3·1	13·6	19·5	85·6	105·1	99·0	1541·0	621·8	2·7	60·8	10·6	46·6	57·2	53·8
(b) COASTAL AREA.															
Calshot	364	7·0	15·6	6·1	8·7	14·8	14·3	958·8	648·4	—	16·5	16·8	23·9	40·7	39·3
Donibristle	547	4·2	14·2	3·1	11·2	14·3	13·8	674·6	489·9	1·8	21·9	5·7	20·4	26·1	25·2
Felixstowe	202	5·5	7·4	2·5	1·0	3·5	3·2	856·4	524·8	14·9	14·9	12·4	5·0	17·4	15·8
Gosport	406	4·9	13·4	4·1	10·2	14·3	13·6	963·1	539·4	—	17·2	10·1	25·1	35·2	33·5
Howden	536	3·6	13·1	2·3	8·4	10·7	10·1	557·8	246·3	—	9·3	4·3	15·7	20·0	18·8
Isle of Grain	345	3·5	8·3	3·6	5·4	9·0	7·5	1188·4	362·3	2·9	20·3	10·4	15·7	26·1	21·7
Leuchars	305	6·8	13·3	2·9	3·8	6·8	6·6	609·8	426·2	—	6·6	9·5	12·5	22·3	21·6
(c) IRELAND.															
Baldonnel	500	6·3	24·7	2·8	17·7	20·5	20·3	606·0	546·0	10·0	16·0	5·6	35·4	41·0	40·6

Chart I. shows the monthly case incidence in ratios per thousand of strength by Commands of the total sickness during 1920. Similarly Chart II. gives the sickness figures excluding cases of 48 hours or less duration.

The sharp drops in August and December illustrate the influence of leave. For men on leave there are naturally no 48 hour cases to report, and medical attention is only sought in serious illness.

The most pronounced August drops occur in Halton and Cranwell figures, these being training establishments, where

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leave is confined to August. In the other Commands leave is granted as circumstances permit.

Christmas leave is universal, and is reflected in the sharp drops in all the Command figures.

The following summary of weather conditions during 1920, extracted from the official meteorological reports, should be read in connection with these charts :—

"The weather of 1920 was remarkable for a wet spring; much rain and low temperature of July and August; damp and misty September; brilliant October; wintry spell during second week of December, and very mild weather just before Christmas.

"*January.*—Mild, wet and windy; the cold spell of the first ten days was compensated for by a mild spell during week ending 17th.

"*February.*—Dry and mild except in the north and north-west. Cold and wet during first and third weeks with wide-spread snow and sleet at end of the third week.

"*March.*—Unusually mild, with preponderance of west and south-west winds, frequently accompanied by snow, sleet, hail and rain.

"*April.*—Cold, unsettled, inclement and showery.

"*May.*—Variable, cold and rainy till 20th, after which, hot and thundery, except in south and east, where conditions were sunny and warm.

"*June.*—Cold, and frequent thunderstorms, Scotland experiencing much sunshine between the 10th and the 20th.

"*July.*—Dull, wet and cold, especially in Scotland.

"*August.*—Dull and cold, very few hot days. Ground frosts common.

"*September.*—More nearly normal. Dew, wet fogs and mist were common.

"*October.*—Much sunshine, especially east and south. The best October for many years.

"*November.*—Fine, but many fogs.

"*December.*—Wintry gales and fogs during the first half. Unusually warm just before Christmas."

Section II.—Diseases calling for Special Mention.

Details of sickness in general will be found in Table II., Chapter I., pages 20–39.

1. Scabies, impetigo contagiosa, and what are popularly known as colds, coughs and sore throats grouped together

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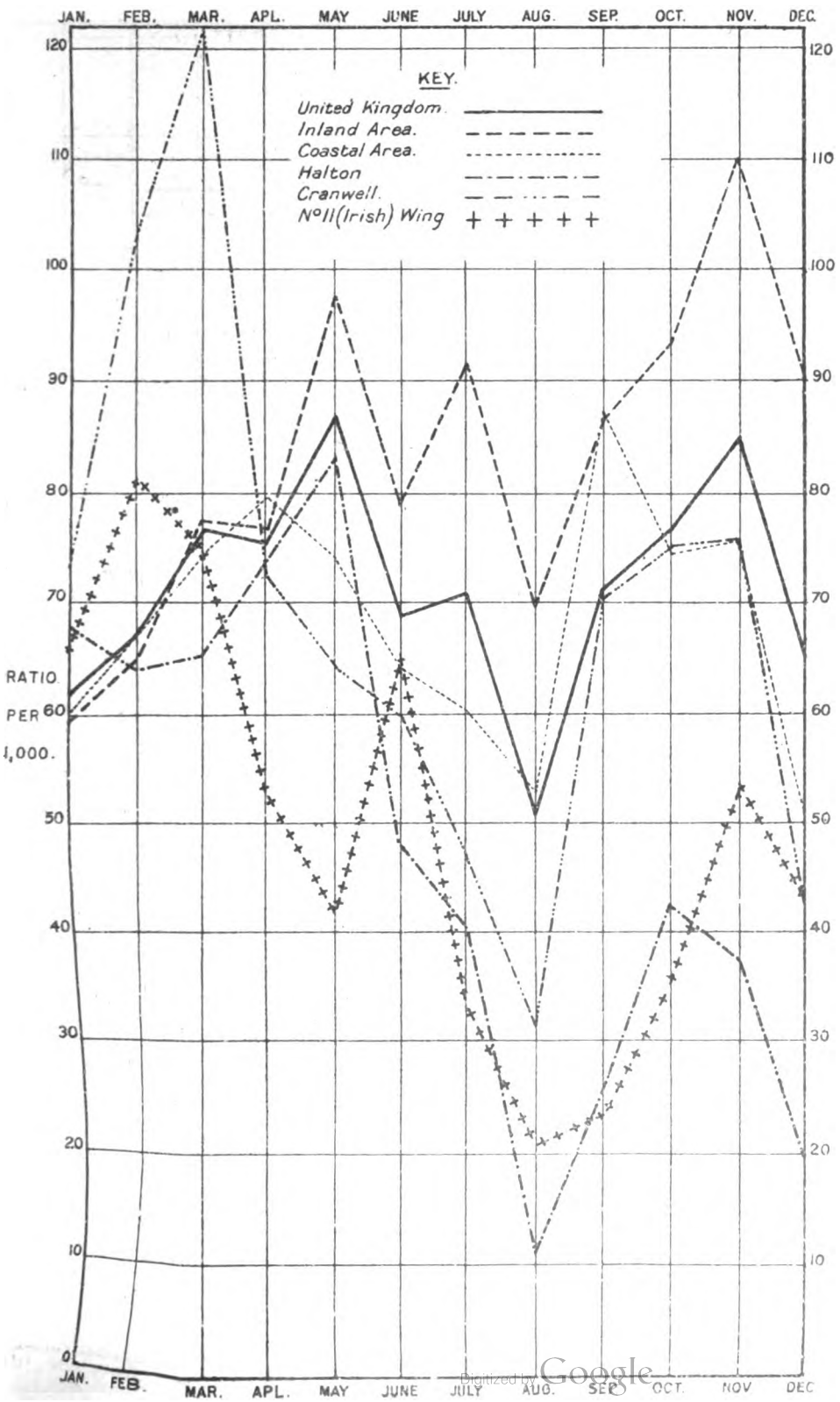
Chart I

Monthly Case Incidence of Total Sickness during 1920. in Ratios per 1,000 of Strength by Commands in the United Kingdom.



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Chap2.
Chart II.

Monthly Case Incidence of sickness during 1920. in Ratios per 1,000 of Strength by Command
in the United Kingdom Cases of 48 hours duration or less are excluded.

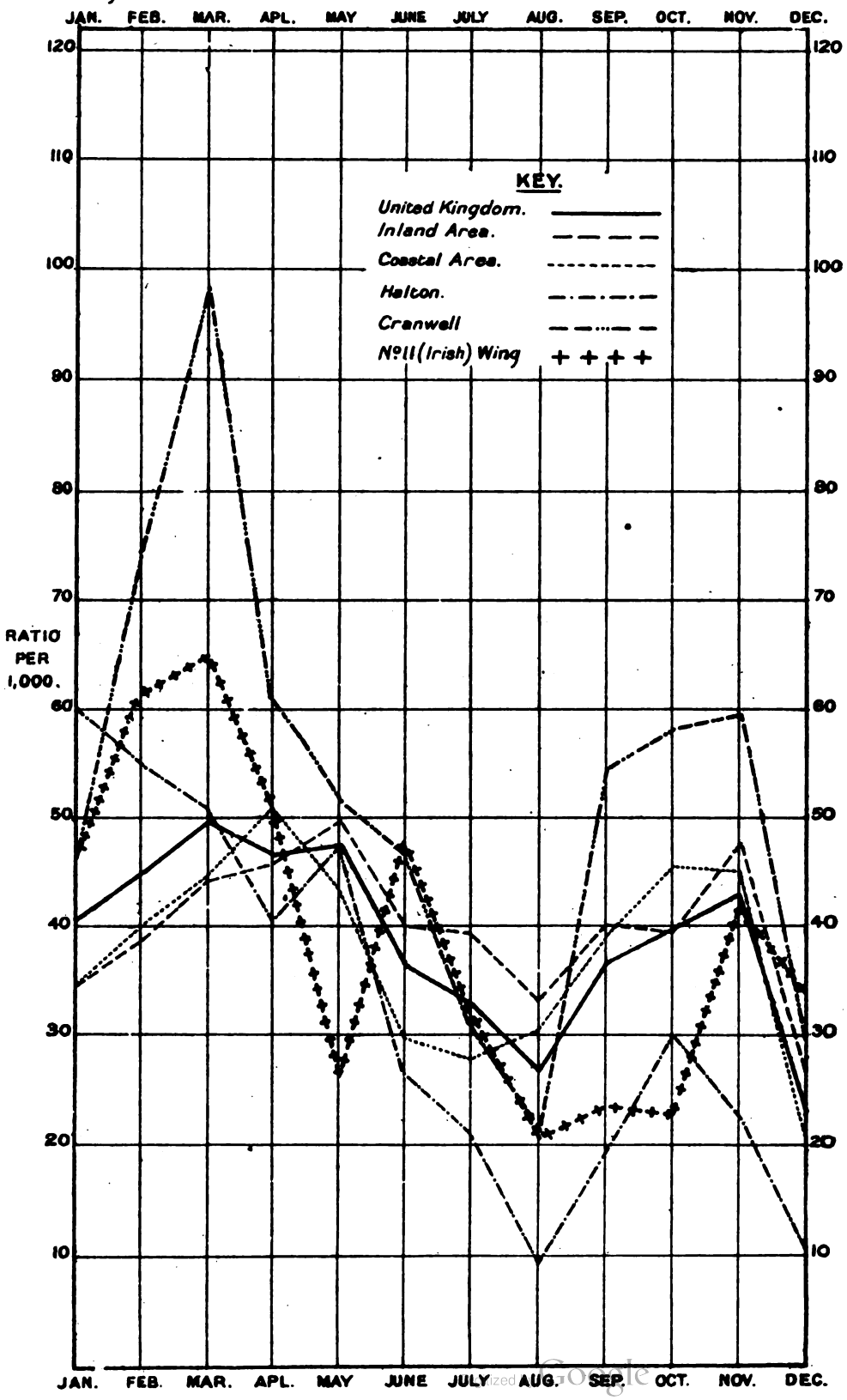

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Chart III.

Monthly Case Incidence of Scabies during 1920, in Ratios per 1,000 of Strength by Commands in the United Kingdom.

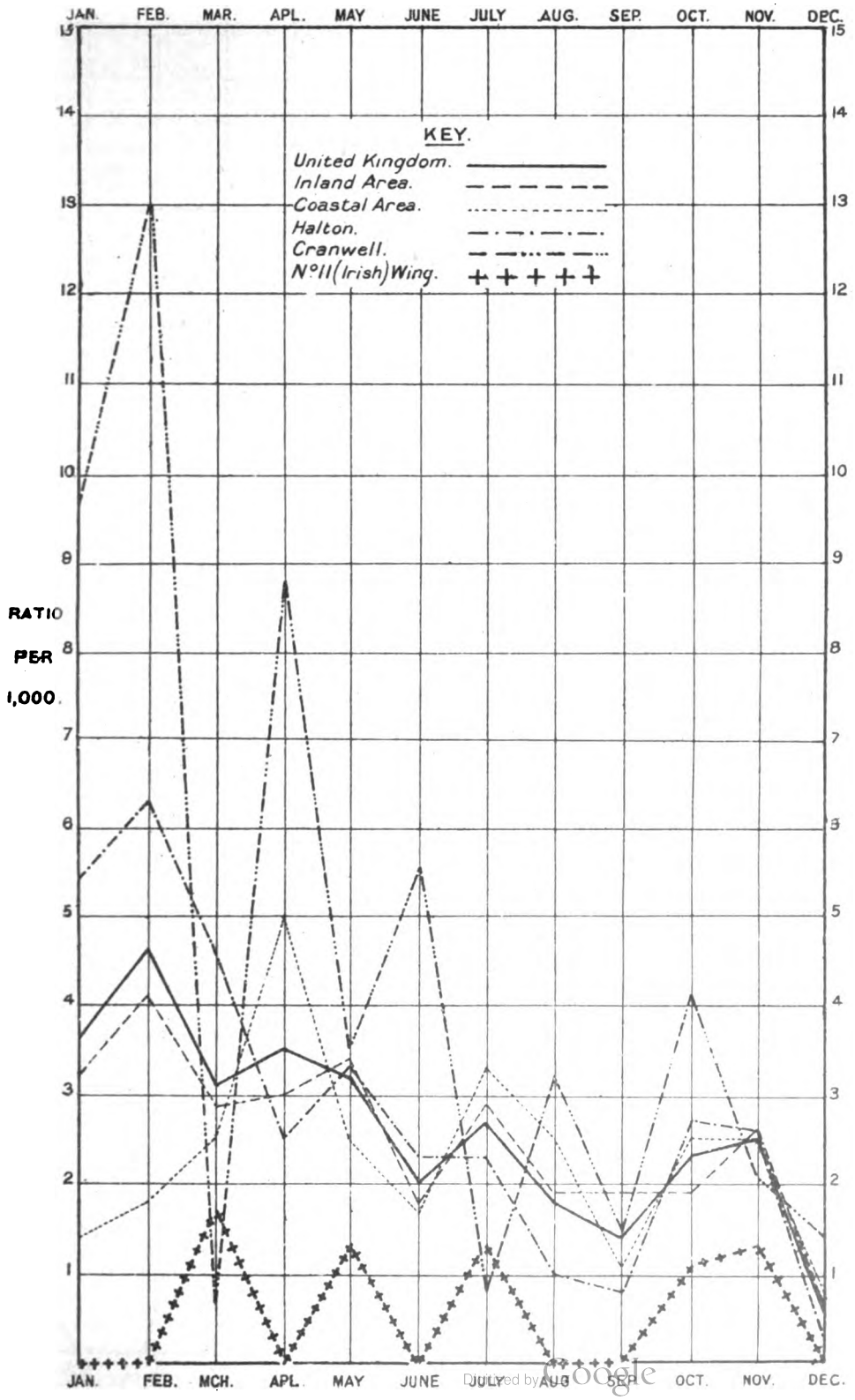

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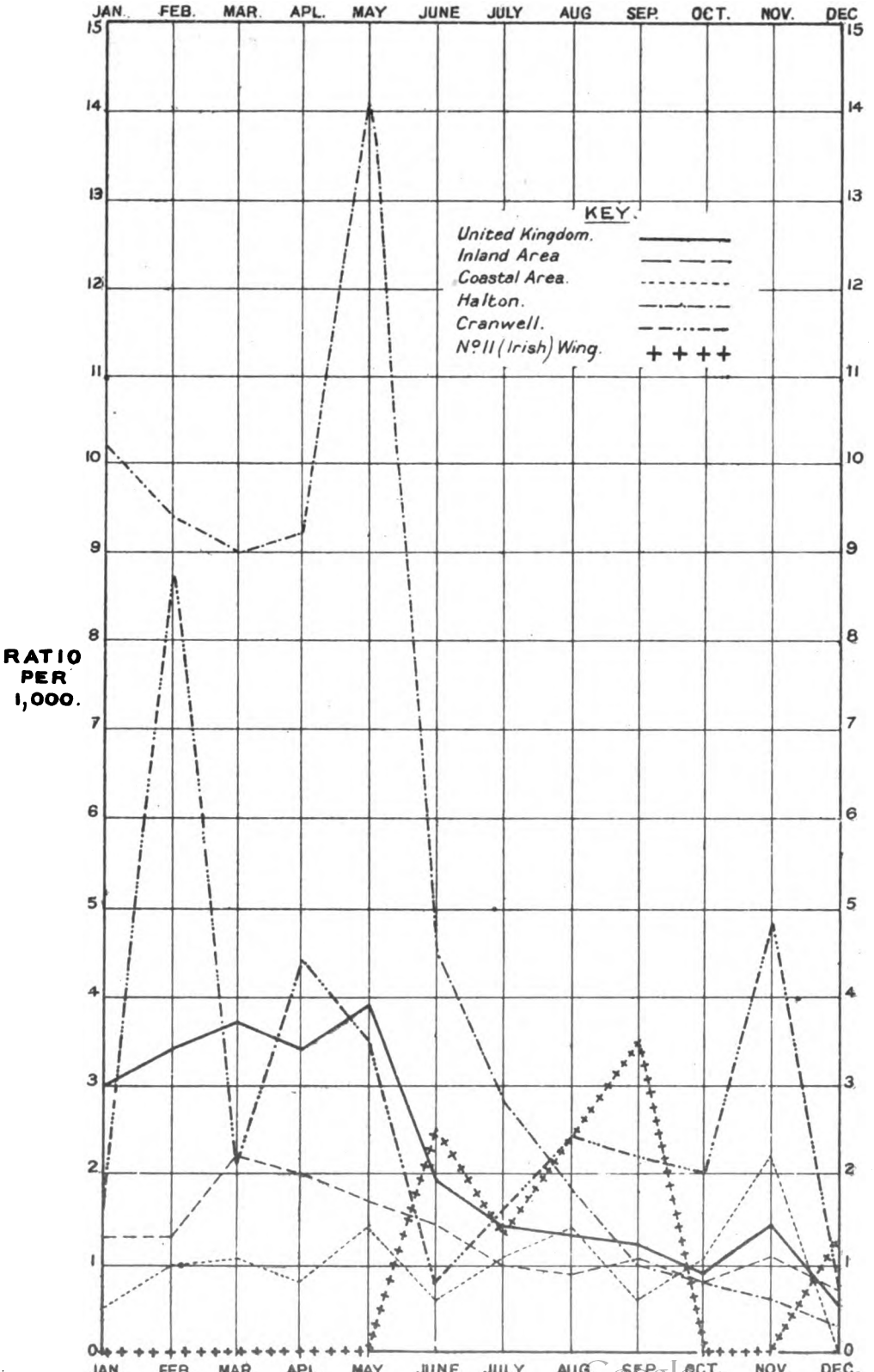
Chart IV.

Monthly Case Incidence of Impetigo during 1920. in Ratios per 1,000 of Strength by Commands in the United Kingdom.



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under the heading of "Upper Air Passage Infections" merit special consideration.

(a) *Scabies.*—Chart III. gives the monthly case incidence of scabies in ratios per thousand of strength under Commands. The general tendency towards reduction in the case incidence ratios as the year progressed is well marked.

The introduction of notification during the early spring was an undoubted factor in its diminution.

(b) *Impetigo Contagiosa.*—Chart IV. shows similar details as regards this disease which was made compulsorily notifiable at the same time as scabies. The reduction in the case rates, particularly at Halton, in the ensuing month is striking. In this connection the following extracts from a report of the Principal Medical Officer, Halton, are of interest:—

> "At the commencement of 1920 scabies and impetigo were amongst the most prevalent diseases at Halton. As regards the latter it was observed on investigation that in the case of some units blankets had not been washed for a considerable period, and although a certain amount of disinfection had been carried out, this applied chiefly to the clothing and bedding of infected cases only . . . . ."
>
> "Many cases were covered on the head, face, hands and varions parts of the body with a severe eruption which seemed particularly resistant to treatment . . . ."
>
> "It had been customary to segregate impetigo cases in huts set aside for the purpose in units . . . but so bad were many of the cases seen, that it was plain that the only thing to be done was to remove them to hospital. The nature of the disease was explained to officers, and they were advised to send all skin eruptions for medical opinion. At this period it was no uncommon thing to find men on duty with signs of impetigo of the face or ears . . . . ."
>
> "I was particularly struck by the fact that most of the cases had one or other side of the face or ear affected and found that they were in the habit of sleeping on the side which had been attacked . . . . ."
>
> "Notification of the disease was instituted, all bedding disinfected and routine disinfection of all blankets ordered . . . Bathing parades were held regularly, and the necessity for proper washing of towels and clothing was insisted upon. Inspection of men's towels revealed the fact that they were in a very dirty condition and that it was difficult with only two towels to ensure a change when necessary. The issue of an additional towel was recommended . . and authorised. A certain amount

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of improvement followed this, but not so much as had been expected. There was, however, a marked decrease after pillow slips and sheets became an issue, but the number of cases was still large. I had observed for some time that it was a common practice for boys and airmen to wear their hair abnormally long and to anoint it with grease . . . as a matter of curiosity I examined a number of heads; a considerable proportion of these were found to have small particles of impetiginous eruption on the scalp . . . boys and airmen were made to get their hair cut and every case of impetigo admitted to hospital had the hair clipped . . . with the result that many patches of unsuspected eruption were revealed. Caps were exposed to direct sunlight every day . . . Arrangements were made on the return of men 'from summer leave' for a medical examination before proceeding to their units. In this way cases were detected and sent straight to the hospital for treatment, with the result that the disease practically disappeared."

"To some extent similar remarks apply to scabies. . . . The increased vigilance which was exercised with regard to the men in connection with impetigo revealed a number of cases of unsuspected scabies, and their early detection and prompt treatment is largely responsible for the decrease which has taken place. Long ago I formed the opinion that there was a definite relation between the incidence of scabies and impetigo and the discipline which prevailed among the men and . . . . I am confirmed in the opinion that the incidence of these diseases varies inversely with the state of discipline plus the personal interest taken by the officers in the men's welfare."

(*d*) *Influenza* threatened, but was mild both in type and spread compared with that of 1918-19. Mild outbreaks occurred at South Farnborough in February, Shotwick in April and May, East Fortune in May, and at Halton in May and June. Precautions involving exercise of some care and trouble by the individual, supervision by medical officers, personal disinfection and early isolation were considered sufficient. At Halton protective inoculation was carried out regarding which the Principal Medical Officer reported as follows:—

"In view of the possibility of an outbreak of influenza the whole of the personnel of Halton Camp received protective inoculation in the beginning of February.

"Of 45 cases which occurred between 21st February and 15th May 1920, 39 had been inoculated; 4 developed pneumonia—3 of whom had been inoculated."

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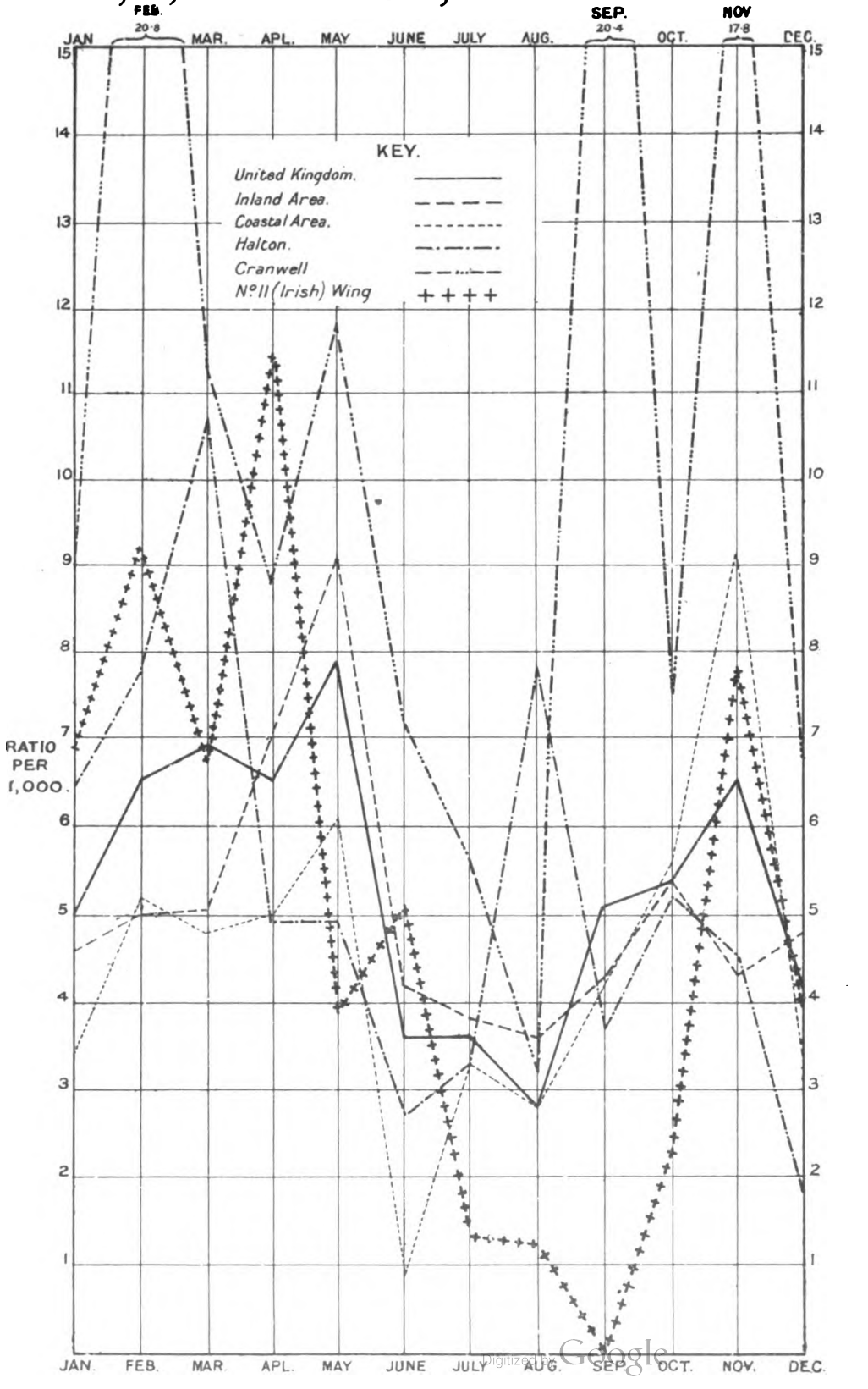
Chap 2.

Chart V.

Monthly Case Incidence of Upper Air Passage Infections during 1920 in Ratios per 1,000 of Strength by Commands in United Kingdom.



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(*e*) Thirty cases of diphtheria occurred during the year—Halton 14, Inland Area 8, Coastal Area 8. At Halton 3 isolated cases were reported between 12th June to 15th July 1920, and a sample swabbing on 16th July 1920 of men with sore throats revealed 5 more cases. Other cases were sporadic. Of nearly 200 contacts swabbed, 21 were found positive and required isolation.

The absence of enteric fever is noteworthy.

(*f*) Eighty-nine cases of malaria were reported during the year. The ratios per 1,000 of the various types are shown on Table II., Chapter I., page 20. Of 44 cases of benign tertian recurrent, 4 were regarded at time of notification as probably indigenous. Three of these were ultimately ruled out, the men having served previously in malarious countries and giving indefinite histories of previous attacks. The fourth, a case at Halton, where anopheles maculipennis is indigenous, served previously in France.

Anti-malaria measures against the breeding places of mosquitoes have been carried out at Halton, Isle of Grain and Eastchurch.

(*g*) *Upper Air Passage Infections.*—Particulars of the diseases that comprise this group are shown in detail in Table II., Chapter I., page 22.

Chart V. provides details similar to those given for scabies and impetigo. As would be expected, the summer months show the lowest case rates. The weather conditions during 1920 may have exercised an abnormal influence. This, however, can only be determined by comparison with corresponding figures in future years.

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TABLE X.—ROYAL AIR FORCE PERSONNEL DISCHARGED THROUGH AGENCY OF THE MINISTRY OF PENSIONS BOARD DURING 1920.

	Number Discharged.	Proportion per 1,000 Discharged.
1. Defects of Upper Extremities (from fracture contraction, luxation, &c.)	163	44·6
2. Defects of Lower Extremities (from fracture contraction, luxation, &c)	244	66·8
3. Poor Physique	106	29·0
4. Syphilis	2	0·5
5. Other Venereal Diseases	2	0·5
6. Tubercle of Lung	11	3·0
7. Other Tubercular Diseases	8	2·2
8. Impaired Constitution and Debility	97	26·6
9. Other General Diseases	99	27·0
10. Malformation of Nose and Mouth	7	1·9
11. Malformation of Chest and Spine	43	11·8
12. Malformation of Urinary and Genital Organs	14	3·8
13. Impediment of Speech	18	4·9
14. Other Diseases of the Nervous System	223	61·0
15. Defective Intelligence	2	0·6
16. Defects of Vision	405	110·9
17. Diseases of Eye and Eyelids	21	5·8
18. Diseases of Middle Ear (Deafness)	303	82·9
19. Other Diseases of the Ear	13	3·6
20. Diseases of Nose and Mouth	19	5·2
21. Valvular Disease of the Heart	148	40·5
22. Other Diseases of the Heart	383	104·8
23. Diseases of Arteries (Aneurism)	—	—
24. Diseases of Veins (Varix)	98	26·8
25. Diseases of Lungs, except Tubercle	78	21·4
26. Other Respiratory Diseases	2	0·5
27. Loss or Decay of many Teeth	70	19·2
28. Hernia	57	15·6
29. Laxity of Abdominal Rings	10	2·7
30. Hæmorrhoids	10	2·7
31. Diseases of Urinary Organs	36	9·9
32. Varicocele	52	14·2
33. Other Diseases of the Generative Organs	21	5·8
34. Diseases of Joints	82	22·4
35. Flat Feet	380	104·0
36. Other Affections of the Bones and Muscles	275	75·3
37. Ulcers, Wounds and Cicatrices	87	23·8
38. Other Affections of the Cutaneous System	7	1·9
39. Malaria	58	15·0
GRAND TOTAL	3,654	1000·0

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CHAPTER III.

THE HEALTH OF THE ROYAL AIR FORCE ABROAD (EXCLUDING INDIA) DURING 1920.

Section I.—General.

Table XI. shows details of sickness under geographical areas. The undue proportion of invalids to the United Kingdom from Europe generally is principally due to the closing down of base hospitals in France in the earlier part of the year, and the consequent evacuation of the remaining cases to hospitals at home.

TABLE XI.

		Area.			
		France, Flanders, Germany, and Malta.	Egypt and Palestine (including "Q" and "Z" Forces).	Mesopotamia.	Total Overseas.
	Average strength	1,147	2,463	868	4,478
Numbers.	No. of fresh cases of sickness:—				
	Less than 48 hours	255	2,612	640	3,507
	More than 48 hours	827	2,078	1,383	4,288
	Total	1,082	4,690	2,023	7,795
	No. of deaths	14	25	17	56
	Nos. invalided to U.K.	88	50	18	156
	Nos. finally invalided out of Service.	84	29	6	119
Averages.	Average constantly sick:—				
	Including 48-hour cases	96·4	168·7	59·4	324·4
	Excluding 48-hour cases	95·4	158·8	56·7	310·9
	Average duration per case:—				
	Including 48-hour cases	32·6	13·2	10·7	15·2
	Excluding 48-hour cases	42·2	28·0	15·0	26·5
	Average No. of days sickness per individual:—				
	Including 48-hour cases	30·7	25·1	25·0	26·5
	Excluding 48-hour cases	30·5	23·6	23·9	25·4
Ratios per 1,000 of strength.	Cases:—				
	Including 48-hour cases	943·4	1,904·2	2,330·7	1,740·7
	Excluding 48-hour cases	721·0	843·7	1,593·4	957·6
	Deaths	12·2	10·2	19·6	12·5
	Invalided out of Service	73·2	11·8	6·9	26·6
	Constantly sick:—				
	Including 48-hour cases	84·0	68·5	68·4	72·4
	Excluding 48-hour cases	83·2	64·5	65·3	69·4
	Invalided to U.K.	76·7	20·3	20·7	34·8

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Table XII. shows the relative proportion of sickness occurring in R.A.F. sick quarters and hospitals respectively.

TABLE XII.

		Area.			
		France, Flanders, Germany, and Malta.	Egypt and Palestine (including "Q" and "Z" Forces).	Mesopotamia.	Total.
	Average strength, all ranks	1,147	2,463	868	4,478
Numbers.	No. of cases of sickness:—				
	In sick quarters:—				
	For less than 48 hours	255	2,612	640	3,507
	For more than 48 hours	395	1,016	833	2,244
	Total	650	3,628	1,473	5,751
	In hospital	486	1,207	575	2,268
	Total	1,082	4,690	2,023	7,795
Averages.	Duration per case:—				
	Sick-quarter cases	4·6	2·8	4·6	3·4
	Hospital cases	66·4	42·8	26·1	43·6
	All cases:—				
	Including 48-hour cases	32·6	13·2	10·7	15·2
	Excluding 48-hour cases	42·2	28·0	15·0	26·5
	Constantly sick:—				
	Sick-quarter cases	8·2	27·5	18·4	54·1
	Hospital cases	88·2	141·1	41·0	270·3
	All cases:—				
	Including 48-hour cases	96·4	168·7	59·4	324·4
	Excluding 48-hour cases	95·4	158·8	56·7	310·9
Ratios.	Average constantly sick per 1,000 of strength:—				
	Sick-quarter cases	7·1	11·2	21·2	12·1
	Hospital cases	76·9	57·3	47·2	60·4
	All cases:—				
	Including 48-hour cases	84·0	68·5	68·4	72·4
	Excluding 48-hour cases	83·2	64·5	65·3	69·4

Chart I. shows the monthly case incidence of disease in ratios per 1,000 of strength under geographical areas. Chart II. is similar, but excludes cases of 48 hours or less duration. Points of interest are:—

(1) Egypt and Palestine figures show a considerable reduction at the end of the year compared with the beginning.

(2) The July and September peaks in the "Rest of Europe" are mainly due to sandfly fever in Malta.

(3) Sandfly fever also accounts for the extremely high summer case incidence figures in Mesopotamia. The smaller October peak is mainly due to an outbreak of influenza at Baghdad. Apart from sandfly fever, sickness in general in Mesopotamia has been satisfactorily low.

Full details of diseases overseas will be found in Table II., Chapter I., pages 20–39.

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Chart I.

Showing Monthly Case Incidence of Total Sickness in Ratios per 1,000 of Strength in Geographical Areas overseas in 1920.

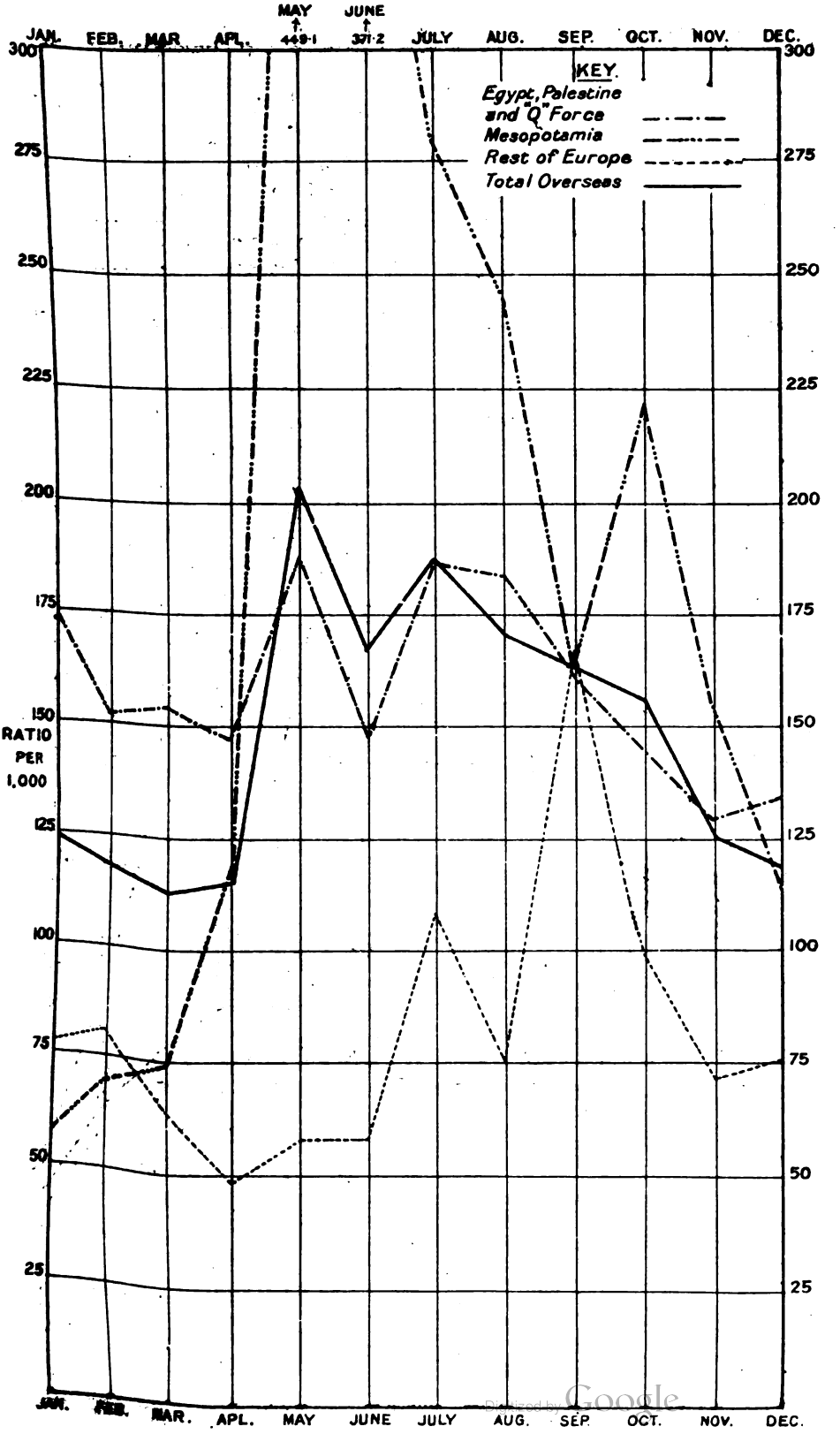

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Chart II.

Showing Monthly Case Incidence of Sickness in 1920 in Ratios per 1,000 of Strength in Geographical Areas overseas. Cases of 48 hours duration or less are excluded.

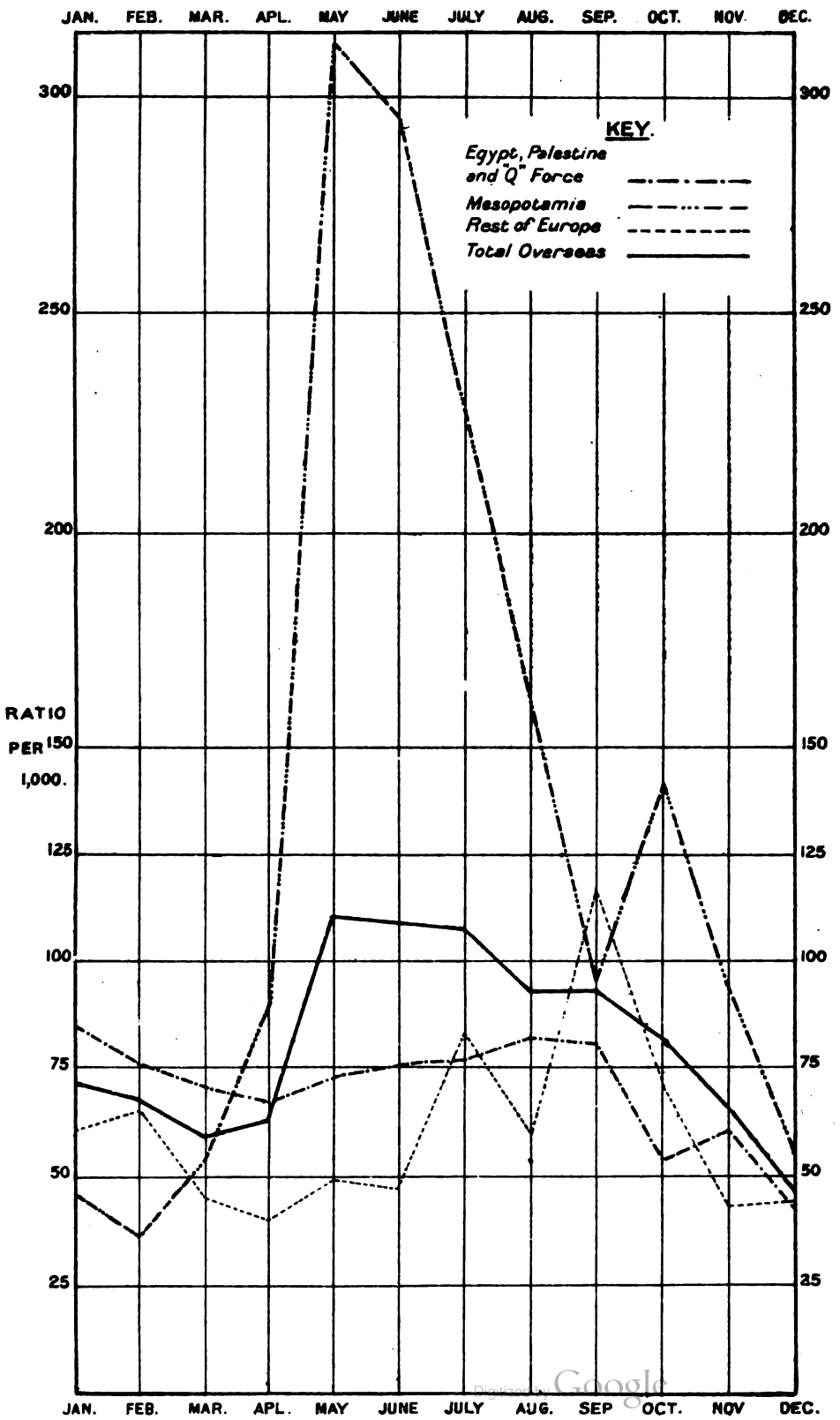

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Table XIII. shows sickness in R.A.F. sick quarters and hospitals for the principal stations abroad.

TABLE XIII.

		Rest of Europe.		Egypt and Palestine.			Mesopotamia.
		Malta.	Heumar.	Alexandria.	Aboukir.	Cairo, Abbassia and Heliopolis.	Bagdad
	Average annual strength.	321	224	254	587	670	667
Averages.	Duration per case:—						
	In sick quarters -	4·5	2·9	1·5	2·9	2·8	5·3
	Total - -	11·0	22·4	16·6	11·1	12·6	11·9
	Constantly sick:—						
	In sick quarters -	4·6	1·2	1·2	7.6	7·7	15·2
	In hospitals -	8·1	17·1	20·0	27·2	34·8	32·8
	Total:—						
	Inclusive of 48-hour cases.	12·7	18·3	21·2	34·8	42·5	48·0
	Exclusive of 48-hour cases.	12·3	17·9	20·1	32·1	40·0	46·6
Ratios.	Ratios per 1,000 of average annual strength:—						
	Cases:—						
	Inclusive of 48-hour cases.	1311·5	1334·8	1846·5	1964·2	1838·8	2202·4
	Exclusive of 48-hour cases.	959·5	933·0	689·0	729·1	801·5	1695·6
	Deaths - -	6·2	17·9	11·8	10·2	6·0	21·0
	Invalids (final) -	18·7	17·9	15·7	8·5	3·0	9·0
	Invalids (to U.K.)	6·2	53·6	35·4	11·9	7·5	19·5
	Average constantly sick:—						
	In sick quarters	14·3	5·4	4·7	12·9	11·5	22·8
	In hospital -	25·2	76·3	78·7	46·3	51·9	49·2
	Total:—						
	Inclusive of 48-hr. cases.	39·6	81·7	83·5	59·3	63·4	72·0
	Exclusive of 48-hr. cases.	38·3	80·0	79·1	54·7	59·7	69·9

Section II.—Diseases calling for Special Mention.

1. *Sandfly Fever.*

(*a*) *Mesopotamia.*

Here the outbreak was severe and was confined mainly to Baghdad, where the majority of the Royal Air Force were stationed. Scattered cases were also reported from Basra, Shaiba, Tanoomah, Mosul and Bushire, but the small strengths and scattered distribution of the personnel at these stations do not warrant any statistical deductions as to the comparative case incidence of the disease there.

Relapses at Baghdad were comparatively frequent. The majority of the cases in July occurred among the personnel of a large draft at Baghdad which had just arrived in the country from home and Egypt and Palestine.

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The epidemiology of this disease is still obscure and there is still much to be learned about the life histories of sandflies in general. In this connection the following extracts from a report on this subject from the Senior Medical Officer, Mesopotamia, are worthy of mention.

"The phlebotomus papatasii is believed to transmit the unknown parasite or toxin of sandfly fever."

"It first appears in Southern Mesopotamia at the end of February, but during March and April papatasii are abundant. It has been frequently noted that the flies are more numerous in one locality than in another, and this suggests that in the former some conditions are present which favour the breeding of these flies."

"It has been observed that the phlebotomus breeds three times during the year—during April and May, July and August, and September to February; no breeding is recorded in June. It must be noted that larvæ hatching in September may remain as such until February, when they pupate and emerge at the end of February and beginning of March."

"It has been discovered by breeding papatasii in captivity that the female does not lay eggs until at least three weeks after fertilisation, and this method of research confirmed the view that she ceased ovulation during June."

"Other investigations indicate that the phlebotomus breeds about two and a half inches below the surface in moist earth which contains straw or decaying vegetable matter. Most of the pupæ have been found in places where straw has been mixed with mud in making muttie walls, especially at the base of these walls, and where decaying vegetable matter has been buried beneath the surface."

"In these situations many different kinds of insects are found: and the sandfly larva is said to feed on the dead bodies and excreta of other insects."

"During the day the sandfly finds harbourage in fissures and crevices of walls and buildings."

"Turning to the conditions on the aerodrome, Baghdad, we have hutments built of muttie, which is a mixture of mud, dung, and straw, with a floor of the same material. This floor calls for repeated watering, as otherwise the huts would be uninhabitable from the presence of dust. The walls are cracked and fissured both externally and internally by the action of sun on dry mud."

"Thus we have the ideal conditions for the breeding and housing of the sandfly."

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"If we turn our attention to the hangars we find the same state of affairs exists. These hangars have been erected on the surface of the aerodrome, where there is a thick growth of camel-thorn. Ultimately this camel-thorn dies and decays, the floor of the hangar becomes moist as water is spilled in filling radiators, and so a perfect breeding ground for the sandfly is created."

"On summer nights clouds of the pests may be seen flying just above the surface, and it has been observed that men working in hangars at night are especially prone to sandfly infection."

"The velocity of the wind is a great factor in reducing the sick rates from sandfly fever, doubtless from mechanical reasons, as the sandfly finds difficulty in settling."

"The wind blew from the south for week ending 28th August and 11th September, hence the slightly increased incidence. The south wind is usually almost a dead calm and is accompanied by an increase of humidity."

Many of the statements in the above report must be regarded as still *sub judice*, and require further investigation before they can be regarded as finally proved or disproved.

It would be interesting to discover whether any connection can be established between the dates of onset and duration of the lesser and greater Shamals (constant north winds blowing for well-defined periods during the hot weather), and the case incidence of sandfly fever before, during, and after the same periods.

Another point which is worthy of study is the connection, if any, between the height and date of onset of the Tigris and Shatt-el-Arab floods, in the early hot weather, and the degree of case incidence and date of onset of sandfly fever, as a high flood would fill in crevices in the river banks and elsewhere, and delay breeding to some extent as a result.

The chief practical point which emerges from our investigations into the prevention of sandfly fever up to date is the importance of eliminating cracks and crevices from floors and walls of buildings. Experience has shown that few men will sleep under sandfly nets, owing to the heat and lack of ventilation caused by the fine mesh necessarily employed. Anti-fly preparations, such as bamber oil, &c., are useful adjuncts, but their effect is transitory; and palliative measures of this nature, useful adjuncts as they are, can never eliminate the disease. The suppression of the sandfly, or possibly the particular species causing the fever, remains the solution of the problem, as has already been demonstrated in the case of anopheles and malaria.

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(b) *Malta.*

The sandfly fever outbreak in Malta during 1920 shows a different seasonal incidence from Mesopotamia and a second and bigger outbreak in September after the original epidemic had almost terminated (*vide* Chart III.). Arrangements have been made for the officer in charge of the Central R.A.F. Laboratory to visit Malta in July to conduct a special investigation on the subject.

2. *Malaria.*

Table XIV. gives the number of cases of (*a*) primary malarias, (*b*) total malarias in the Middle East Command during 1920. There were a further 9 cases in the rest of Europe. The figures in brackets under July and August are the number of cases which occurred at Maltepe (Constantinople) among the personnel of the "Q" Force, which consisted mainly of the 55th Squadron, whilst stationed there during these two months.

The principal localities from which the primary cases are reported are Maltepe (38) (*vide* supra); Ramleh (Palestine) (24), this station being the main source of malaria infection in Egypt and Palestine; Baghdad (17); Aboukir (7); Abassia, Alexandria, Shaiba (3); and 3 further cases also occurred among the personnel of No. 55 Squadron in September while en route for Mesopotamia on board H.M.S. "Ark Royal." These cases were undoubtedly contracted at Maltepe.

The 17 cases at Baghdad call for comment, as Lower rather than Upper Mesopotamia is generally regarded as the main source of infection. North of Amara primary malaria should be comparatively rare. The probable explanation is that these cases became infected south of Amara, prior to their arrival at Baghdad.

TABLE XIV. (*a*) SHOWING MONTHLY CASE INCIDENCE OF PRIMARY MALARIA IN 1920 (OVERSEAS).

Area.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
							(3)	(35)					
Egypt and Palestine, and "Q" Force.	—	1	2	4	2	5	5	37	8	5	13	—	82
Mesopotamia - -	—	1	—	—	2	3	6	3	2	10	1	—	28
Total - -	—	2	2	4	4	8	11	40	10	15	14	—	110

TABLE XIV. (*b*) SHOWING MONTHLY CASE INCIDENCE OF ALL MALARIAS IN 1920 (OVERSEAS).

Area.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
							(5)	(39)					
Egypt and Palestine, and "Q" Force.	3	3	9	10	11	12	9	43	16	13	16	6	151
Mesopotamia - -	1	3	2	—	3	5	9	9	6	24	2	6	70
Total - -	4	6	11	10	14	17	18	52	22	37	18	12	221

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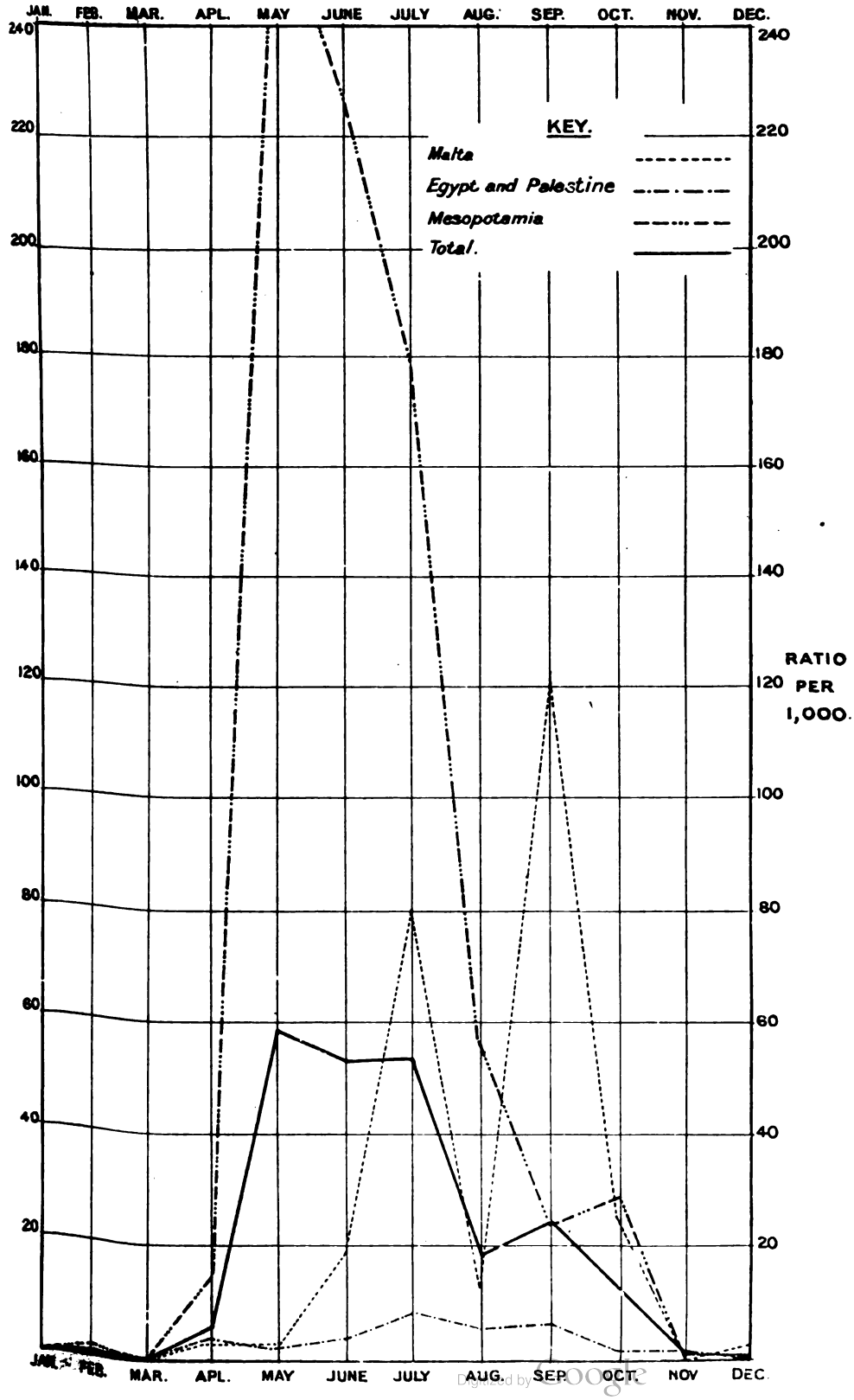
Chart III.

Showing Monthly Case Incidence of Sandfly Fever in 1920. in Ratios per 1,000 of Strength in Geographical Areas overseas.



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3. *Dysentery.*

Table XV. shows the monthly case incidence of this disease in Egypt and Palestine, including "Z" force in Somaliland. The numbers are too small for useful translation into ratios per 1,000 of strength. Clinical dysenteries have been included, *i.e.*, cases with typical signs and symptoms of dysentery, but negative to bacteriological tests.

TABLE XV. (*a*) EGYPT AND PALESTINE AND "Z" FORCE.

Disease.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
Clinical	1	2	—	—	1	2	2	6	3	2	7	3	29
Bacillary	2	1	3	5	5	5	2	4	6	1	1	2	37
Protozoal	1	1	4	2	2	1	—	3	—	1	1	—	16
	4	4	7	7	8	8	4	13	9	4	9	5	82

(*b*) MESOPOTAMIA.

Clinical	—	—	—	—	—	1	—	1	—	—	2	1	5
Bacillary	2	—	—	1	—	—	—	—	—	1	1	—	5
Protozoal	1	1	—	1	—	1	2	1	—	1	3	—	11
	3	1	—	2	—	2	2	2	—	2	6	1	21

Table XVI. shows the stations in which these cases occurred. Aboukir and Alexandria stand out as causing over half the cases in Egypt and Palestine and "Z" force. This is probably attributable in the main to the thoroughly unsanitary condition of the surrounding villages.

TABLE XVI., SHOWING CASE INCIDENCE FOR DYSENTERY BY STATIONS IN EGYPT AND PALESTINE, AND "Z" AND "Q" FORCES AND MESOPOTAMIA.

Station.	Clinical.	Bacillary.	Protozoal.	Total.
Abbassia	1	3	1	5
Aboukir	12	11	4	27
Abu Sueir	1	1	—	2
Alexandria	6	7	4	17
Baghdad	4	3	11	18
Basra	—	1	—	1
Cairo	—	1	—	1
Heliopolis	3	3	1	7
Helwan	2	4	—	6
Ismailia	—	4	—	4
Kantara	—	2	—	2
Ramleh	2	1	—	3
Shaibah	1	1	—	2
Suez	1	—	1	2
Somaliland	1	—	5	6
TOTAL	34	42	27	103

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4. *Heatstroke and Sunstroke.*

There were 24 cases of this disease in Egypt and Palestine, the maximum number occurring in any one month being 8 in August.

In Mesopotamia there were 56 cases, 8 occurring in July, 29 in August, and 16 in September, giving monthly ratios per 1,000 of strength of 9·3, 33·1, and 14·4 respectively.

Section III.—"Z" Expedition.

The "Z" force left England for Somaliland in the autumn of 1919 and was finally disbanded at Suez in April 1920. Its average monthly strength during the time it was in existence in 1920 was 214 all ranks, and its sickness during this period represented an equivalent annual ratio of 415·9 per 1,000 of strength, excluding, and 733·6 including, cases of 48 hours or less duration. There were no flying casualties, deaths nor invalids to United Kingdom. The general sickness figures are included in those for Egypt and Palestine. The expedition was mainly troubled by the presence of purgative salts in the drinking water, and consequently the great majority suffered from varying degrees of enteritis. Of the 89 cases of sickness occurring during 1920, 18 were due to this cause, sandfly fever accounting for 7, tonsillitis 7, dysentery 6 (*vide* page 55), pyrexia of unknown origin 4. The remainder consisted of not more than 3 cases of any one disease.

The expedition is of medical interest in that—

(*a*) It was the first occasion on which medical arrangements were controlled entirely by the R.A.F. medical service. There was a R.A.F. base hospital at Berbera, and miniature clearing stations and aid posts up country as required.

(*b*) An aerial ambulance was used for the first time in desert warfare. The machine was a modified De H. 9 and carried one stretcher and attendant. It value is well shown by the following extracts from private correspondence from Somaliland :—

> "The old 'blood waggon,' as everyone calls the aerial ambulance, has proved a complete success. Certainly for desert warfare and the transport of sick or wounded, where hitherto only camels or pony litters have been available, the aeroplane stands out all on its own even for the most serious cases. I must say I was inclined to be sceptical at first, and in my estimates for the transport of 'Z' casualties did not count upon the aeroplane at all as it was only in the experimental stage."
>
> "This campaign has, however, demonstrated the efficiency of the aeroplane as an ambulance."

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"As luck would have it, our first case was X. When the hot pursuit of the mullah commenced, after we had bombed him out of his fort and hiding place at Jedali, X., although suffering from a septic toe, insisted on joining the hunt. It was a very hot chase, the Camel Corps doing 90 miles in 36 hours. X. developed general septicæmia, with lymphangitis and adenitis, and had to be carried in a litter into our advanced aerodrome at El Afweina, where he arrived in a state of collapse, with a temperature of 104° F. The old 'blood waggon' happened to be standing by, and X. was immediately transferred to our 'Z' Advanced Hospital at Eil Dur Elan, where he arrived within an hour of his arrival at El Afweina—distance El Afweina to Eil Dur Elan, 75 miles,—that is, 3½ days track by camel. X. was collapsed on arrival at Eil Dur Elan; and after a short interval for rest and recovery from shock, &c., Y. opened the foot, and the whole leg was submerged in a hot stupe. At any rate, X.'s temperature was got down, and the local septic focus relieved; and after a few days rest he was again put into the aerial ambulance and transferred to Berbera —100 miles an hour—accompanied by Z. in the observer's seat. X. was of course a stretcher case. Two days later he was operated on—an X-ray photograph and previous clinical examination having confirmed the necrosis of middle phalanx—and the offending toe amputated, since when the patient has steadily improved and will soon be about again."

"Thus the aerial ambulance has shown that, especially in operations over country where other transport is so tedious and trying, the aeroplane is a veritable godsend for sick and wounded."

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CHAPTER IV.

MISCELLANEOUS.

Section I.—Aviation Candidates' Medical Board.

The Board, as at present constituted, consists of a president, a medical specialist who is a civilian and also acts as assessor, eye, ear, nose and throat specialists, and a medical officer conversant with the routine medical and surgical examination.

Candidates for commissions, serving officers and others, are sent for examination before the Board as follows:—

A.—Under arrangements made by the Air Ministry:—

(i) Officers of the Royal Navy and Army on secondment to the Royal Air Force.

(ii) Ex-officers, whether previously flying officers or not, who apply for commissions in the Royal Air Force.

(iii) Candidates for direct entry on short service commissions.

(iv) Candidates for direct entry on permanent commissions after nomination by recognised universities.

(v) Candidates for the R.A.F. Cadet College.

B.—Under arrangements made direct by units:—

Officers of the R.A.F. who are due to begin instruction in flying.

C.—Under arrangements made by headquarters of areas or commands:—

Flying officers and cadets who may be referred for an opinion as to their flying fitness.

D.—Under arrangements made by the Air Ministry:—

Civilian pupil pilots and applicants for civilian licences.

The following table shows the total number of examinations to determine flying fitness in 1920. Figures for examinations of officers other than the general duties branch are excluded:—

—	Numbers.	Accepted (under 30 Years).	Accepted, 30-40 Years.	Rejected.
Cadets - - - -	162	94	—	68
Officers under A (i), (ii), (iii), B, C.	448	290	24	134
Civilians under D* - -	64	59		5
TOTAL - -	674	467		207

* Eighty-four civilians were also re-examined for their six-monthly examination in accordance with the requirements of the Air Navigation Acts. These re-examinations are now carried out by the medical adviser to the Controller-General of Civil Aviation.

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Exact causes of rejection are not given, as nearly 40 per cent. of the rejected candidates were found to be unfit owing to a combination of defects which were rarely organic, grouped together in the following table under the heading "Defective Physical Efficiency."

ANALYSIS OF CASES REJECTED BY THE AVIATION CANDIDATES' MEDICAL BOARD DURING 1920.

Applicants.	Visual Defects. (1)	Ear, Nose, Dental, Throat. (2)	Medical and Surgical. (3)	Defective Physical Efficiency. (4)	Combinations of 1, 2, or 3 with 4.	Totals.
Cadets	17	9	9	27	6	68
Permanent and short service commissions.	29	6	24	51	24	134
Civilians	3	1	1	—	—	5
TOTALS	49	16	34	78	30	207

It must be remembered that the assessment of the Board deals with selected individuals, and it is therefore impossible to categorise all rejects in terms of disease as does the consultant in rejecting an individual for life insurance.

In addition to a medical and surgical examination, together with a careful enquiry into personal and family history, it is now the practice to use as a routine measure certain tests for what may be termed the physiological assessment of the individual. These tests have been fully described in previous publications, notably in the volume on the Medical Problems of Flying (Special Report Series, No. 53, Medical Research Council, 1920). They may be summarised as follows :—

1. Pulse rate, at rest, and response to graduated exercise, together with rate of return to normal.
2. Measurement at rest of systolic and diastolic pressure.
3. Presence of tremor of eyes, tongue, fingers.
4. Degree of ability to balance on either leg for 15 seconds.
5. Degree of ability to raise rod on board from table to shoulder level.
6. Character of knee jerk.
7. Vital capacity.
8. Length of time the breath can be held after full expiration and full inspiration.
9. Degree of power to force steadily a column of mercury as high as possible with lips and cheek held.
10. Fatigue test—length of time 40 mm. of mercury can be sustained with the breath held after full expiration and full inspiration, together with nature of pulse during this time.

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In addition, when specially indicated, other special tests are employed, such as examination by means of the rotary chair and the measurement of reflex times. The former is employed principally when there is a question of swing or train sickness or previous ear trouble; the latter chiefly in the case of officers who have already had flying experience and are referred for opinion as to flying fitness. In the preliminary examination it has, generally speaking, been found that a history of aptitude at various sports requiring eye and limb co-ordination is of equal value to a comparatively elaborate test carried out on a special occasion under circumstances somewhat trying to the candidate.

ACCEPTED PILOTS SUMMARY.

1.	2. Cadets. (90)	3. Permanent and Short Service Commissions. (267)	4. Civilians. (56)	5. War Standards of Tests.
Age - - - - yrs	18·7	23·6	24·8	
Height:				
Standing - - cms.	175·2	173·7	173·2	Not available.
Sitting - - „	89·8	90·1	89·8	
Weight - - kgms.	61·8	62·9	63·4	
Chest - - - cms.	85·4	87·4	84·9	
Vital Capacity - c.cms.	4,502·0	4,613·0	4,448·0	4,000·0
Breath Holding - - secs.	80·4	70·4	69·8	70·0
Expiratory Force mm. Hg.	124·8	131·4	126·1	110·0
Fatigue Test - - secs.	63·2	59·4	59·7	52·0
Blood Pressure:				
Systolic - mm. Hg.	128·5	129·6	130·2	120·0
Diastolic - „	81·1	81·3	80·5	80·0
Pulse Rate:				
Sitting - per min.	76·5	74·3	73·2	72·0
Standing - „	86·9	83·2	80·0	84·0
After exercise „	106·0	102·5	103·3	108·0
Return to normal secs.	23·0	22·0	20·5	under 30·0

NOTE.—The figures in brackets at the head of columns 2, 3, and 4, refer to the number of cases to which the averages apply.

The standards adopted for the 10 tests enumerated above are based on the careful examination of fit and successful pilots, *i.e.*, standards of physiological fitness for endurance combined with mental attitude towards the pursuit of flying as well as to combatant service in the air. The causes of rejection, apart from visual, and ear, nose, and throat defects, are, generally speaking, conditions of the respiratory, circulatory and nervous systems which have been found to be absent in the successful pilot, and present in pilots who have broken down, as, for example, poor vital capacity, low diastolic in addition to high pulse pressure, poor response of pulse to gradual exercise, tachycardia, and presence of tremor, and other signs of deficient nervous control. The standards of the Board must not be

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deemed unduly high—they are not. Given a healthy young individual in good physical condition, with normal vision, who has a clean family history, with especial relation to the nervous system in general and a good personal history in relation to disease, there is little doubt that he would fulfil the required standards.

The table on page 60, of successful candidates during 1920, shows the average response to such tests and measurements as were found capable of simple arithmetical expression. It will be noticed that the groups do not correspond in number with previous tables. This is due to the fact that records were not completed in every case. The averages shown are in respect of all cases for which complete records are available. The chief point of interest is the higher standards shown in post-war compared to war examinations, a fact which apparently is to be attributed to the cessation of the nervous strain of war conditions.

Section II.—Medical Research in India.

The chief points in connection with the health of the Royal Air Force in India may be summarised as follows :—

The health of the Royal Air Force in India during 1920 was good, the chief incidence of sickness being, as would naturally be expected, in the hot months of the year.

Sandfly fever, malaria, effects of heat and venereal disease were the chief causes of admission to hospital. Enteric group diseases and dysentery showed a low admission rate. Minor septic and skin infections were prevalent in hot weather, but of scabies there were only a few isolated cases.

There was no serious outbreak of infectious disease.

Medical Research on Flying Personnel.

The past year has been mainly spent in working out the general problems connected with organisation and administration of the Royal Air Force Medical Service in India ; consequently the time available for research into the medical problems in connection with flying has been restricted ; nevertheless, points requiring more urgent investigation have been defined and considerable progress made. Some idea of the conditions under which flying is carried out in India may be gathered from the following notes :—

> "Flying in the Punjab and North-West Frontier Province is possible all the year. Offensive operations against the hostile tribes on the frontier usually take place during the cold weather. During the greater part of the year flying is usually practised in the early hours of the morning. Flying over mountains after the sun is up is frequently unpleasant owing to bumps. During the monsoon, clouds are found covering the peaks."

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Summary of operations from 1st February to 29th February, describing the weather conditions, states as follows :—

> "Throughout the first two weeks of the period under review the weather was extraordinarily bad. High winds prevailed, with heavy low clouds, rain on the plains and snow and sleet in the hills. Even on the fine days the air currents were so bad in the high valleys that on several occasions machines got out of control, and experienced flying officers had attacks of sickness. The cold also was intense."

The strenuous nature of the work done on the frontier is described in the same report :—

> "Most of the objectives for our machines in these frontier operations are more than 5,000 feet above sea level, and are generally surrounded by ridges between 2,500 and 3,500 feet higher still. Flying in country of this nature is exceedingly difficult, especially for the larger machines. Whenever low flying has been done (and this is always necessary for successful co-operation with infantry), pilots were constantly finding themselves in gorges too narrow for turning, and from which escape could only be made by climbing as steeply as possible. In addition, the air is always extremely rough owing to cross-currents blowing up and down the numerous valleys. On one occasion a Bristol Fighter dropped quite 200 feet in a pocket when crossing the Razmak watershed."

The first point requiring investigation in connection with the efficiency of flying personnel has been to ascertain as far as possible how far any physical deterioration or disease is to be attributed to flying in India *per se* or merely to the fact of living there. At the present time it is impossible to dogmatize on these points. So far, investigations tend to show that after nine months' residence in any station in India there is a lowering of the average standard of physical efficiency reached in England. Also, the strain of frontier flying, owing to the nature of the country, is considerable and must remain so even in peaceful times, which are comparatively rare on the frontier. There are other conditions, physical and mental, apart from actual flying, which affect the well-being of the flying officer in India, namely :—

1. The liability to infection of malaria, bowel complaints and the various short fevers prevalent in India.

A flying officer is not more liable to these infections than anybody else; but if he is to be efficient in his duties there is more need for him to be in perfect physical health.

2. Though personal hygiene is on the whole good, many officers have yet much to learn about the correct method of living in India.

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3. From the mental aspect, the fact must be borne in mind that such flying as takes place may be regarded as occurring under war rather than peace conditions over exceptionally difficult country. In this respect, however, the Air Officer Commanding Royal Air Force, India, considers that frontier flying will lose some of its dangers with improved engines and as officers learn to fly their machines in India. With improved games and sport facilities also, physical fitness should show distinct improvement.

From the information already gained during 1920 it appears that disabilities chiefly found to affect flying officers may be classified as follows:—

(1) Physical inefficiency due to—

(*a*) Tropical diseases—

(i) Malaria, sandfly fever and other pyrexias of short duration.

(ii) Colitis, dysentery and diarrhœa.

(*b*) Lack of opportunity and proper care in keeping fit, especially when considered in connection with climatic conditions, such as glare and high wet bulb temperature.

(2) Inefficiency due to mental causes—flying stress caused by nature of country, &c., and in some cases domestic worry.

The Effects of Malaria.

Investigations are being made into the effects of malaria on the following lines:—

(1) On general flying ability as regards type of disease, severity of attacks and the presence or absence of complications and sequelæ (cerebral malaria, anæmia, physical inefficiency and neurasthenia).

(2) The especial effects of malaria:—

(*a*) On the various bodily systems.

(*b*) On vision.

Effects of Malaria on Flying Ability.

It has been hypothecated that certain unexplained accidents occurring to pilots who have suffered from malaria were due to the pilot losing control owing to an acute attack of the disease while in the air. On investigation no evidence of this was found.

The following statement demonstrates the fact that a rigor in the air at an altitude of 9,000 feet does not necessarily result in the pilot becoming incapable of control.

Flight Lieut. X. (an experienced pilot flying on the frontier) on one occasion had a rigor in the air; also temporary sensation of inability to breathe; took off goggles, and put his head outside machine, then felt better, stating afterwards that

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machine was never out of control; and he did not think that, if a rigor had occurred whilst landing, it would have interfered with his ability to any appreciable extent.

One such case as this, although interesting, cannot be regarded as evidence to the contrary on this point.

From the experience already accumulated by Royal Air Force medical boards both in India and the United Kingdom, it is very probable that loss of control in the air is due to physical inefficiency caused by previous diseases, of which malaria is undoubtedly one.

The preliminary investigations now in progress suggest:—

(*a*) That malaria and its sequelæ, and possibly the administration of quinine in this connection, are closely related to the development of oxygen-want and flying stress at high altitudes.

(*b*) That careful work is necessary in order to estimate with accuracy the final results of this disease upon flying personnel; for, coupled with the effects of sun glare upon the eyes, it presents the most important problem with which one has to deal in India.

(*c*) That there is no reason yet revealed why a pilot after suffering from malaria should not be in every way as efficient as he was before, provided that suitable time and treatment is given in direct ratio to the severity of the attack.

Glare and its Effects.

Glare is a persistent factor at all seasons of the year, but it undergoes natural and marked variations in intensity. During the summer months at stations on the plains few people can deny that they are influenced by its effects to a greater or lesser degree. There is no doubt that glare as experienced on the ground is ameliorated by altitude. When a machine has attained a height of about 500 feet the difference is appreciable. The intense, irritating, almost painful reflections from the light grey roads and dry grazing fields slowly relax their effects and become modified. At a height of 2,000 to 3,000 feet the change is very apparent, and one can observe the landscape without noticeable strain. It is, therefore, on taking off and on landing that glare effects during flights are most apparent.

Optical Effects of Glare.

These may be divided into:—

(i) Subjective.

(ii) Objective.

I. The most noticeable subjective effects fall roughly under four headings:—

(*a*) Photophobia.

(*b*) Headache.

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(*c*) Sensation of necessity to "screw up" the eyes.
(*d*) Ocular pain.

II. Objective signs may be enumerated as follows:—

(*a*) Conjunctival injection.
(*b*) Blephorospasm.
(*c*) Contracted pupils (with a tendency to sluggishness).
(*d*) Signs of heterophoria of varying degrees.

Most of these signs and symptoms explain themselves and are the manifest result of continued ocular strain, brought about by a persistent irritating stimulus. With the exception of II. (*c*) they do not call for further discussion. As regards II. (*d*) it may be stated that, when considered as a whole, up to the present there are few pilots suffering from the condition in any marked degree, nor can even a small number of minor flying accidents be ascribed to "Inco-ordinated Ocular Muscular Balance," although bumpy landings are not infrequent. It would be unwise, however, to assume from this that such a state of affairs will persist, for it is obvious that time is a great factor in this connection. After five years of flying have passed by, it will be more possible to pass an opinion in this respect. In the meantime means must be found to neutralise the effects of glare intensity without producing unnatural landscapes. On this account special experimental goggles fitted with a various tinted lens of Crookes' glass have been sent to India for test.

One of the most marked features demonstrable during routine eye examination in India is the peculiar reaction so consistently found to the official Royal Air Force test for true judgment of distance (the orthotelemeter). Even when tests for convergence and heterophoria show nothing that can be called abnormal, the readings in respect of judgment of distance often show remarkable variations.

In England the maximum visual error is regarded as 30 mm. either side of zero, and individuals giving a reaction outside this fall naturally and correctly under the heading of "possible erratic landers."

In India, under exactly similar conditions, and employing an orthotelemeter supplied by the Royal Air Force Medical Research Laboratory, it is exceptional to find a case in which the limit of 30 mm. is not trespassed. Under these circumstances one would expect to find bad or at least bumpy landings to be common, but in practice this is not so.

It may be stated as a general fact that, excluding the orthotelemeter readings, all other tests are chiefly characterised by normal response. It remains, therefore, to discover the factor which exercises its maximum influence over the orthotelemeter readings while it maintains a state of apparent inactivity in respect of other visual tests. As a possible explanation, the effects of glare upon the ciliary muscles may

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be put forward. It is reasonable to assume that intense light might produce slight tonic or clonic spasms in the ciliary muscles with resulting variations in the thickness of the lens—this would in turn produce a state of alternating myopia and hypermetropia and yield at once the abnormal readings observed. There is some evidence, however, that a mental factor may also be involved.

Treatment of Sun Glare.

Some protection for the eyes, particularly during the period from April till October, is essential. Tinted glasses of an ordinary nature are of little real value. Pilots object strongly to using them because they cause unnatural landscapes; and there is no question that they bring objects apparently nearer than they really are, and in this respect do more harm than good. Chlorophyl goggles are the best of a bad lot and cannot be recommended for pilots. Trials are now being made of Crookes' glass of various tints. To attain the ideal, a glass is required practically colourless and yet gifted with the power to cut out the harmful rays.

The Physical Efficiency Tests.

Observations show that with the onset of failing health there is a corresponding lowering of ability to perform these tests. New arrivals do better than those who have been in the country for some time. During the hot weather the averages are lower than in the winter, and after leave to the hills the improvement is marked.

The variation in the heart beat taken at rest, standing and after graduated exercise, is one of the most reliable tests for fitness.

The response of the pulse whilst sustaining 40 mm. of Hg. promises also to be one of the best indications of impending physical inefficiency.

There appears to be also a high correlation between unfitness and inability to perform tests for neuro-muscular co-ordination.

The exact value of the so-called efficiency tests as adjuncts to clinical examination will be better appreciated when more exact standards are worked out. Respiratory tests, for example, are affected by the height above sea level at which they are carried out. Any tests also in which mercury is used must be affected by the height of the barometer. This fact has already been noticed and duly appreciated.

An analysis of results obtained from detailed examinations of over 300 flying personnel taken at various Royal Air Force stations in India suggests the following points of interest:—

1. For India, based on a clinical observation of the subject, a tentative standard of 50–60 secs. for the breath-holding test should be set as normal, varying according to location of station as compared with 70 secs.

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for United Kingdom. Below 40 secs. has been deemed a poor response to this test, 40–50 a borderline response.

2. For expiratory force an approximate average of 110 mm. Hg. should be taken with a minimum of 80 mm. Hg., as for the United Kingdom.

   It is consequently only in those cases of marked unfitness, when the subject is incapable of raising the mercury above 70 or 75 millimetres, that this test is useful.

3. The fatigue test appears to be of undoubted value in assessing the degree of physical fitness. The average fit case in the plains is able to sustain 40 mm. Hg. for 40 secs., the unfit case for less than 35.

   The pulse response during this test usually diminishes in rate from the start in cases exposed to hot weather—even when fit for full duty.

4. The blood pressure (systolic) tends to fall during the hot weather, and stress is associated with a pulse pressure approaching 50.

5. New arrivals were generally found to be in better physical condition than pilots who had been some months in the country.

6. In hill stations, the well-known effects of altitude in the first few days after arrival are well demonstrated by inability to perform these tests up to standard.

Section III.—Functional Nervous Disorders among R.A.F. Officers during 1920 and their Causation.

"Functional Nervous Disorders" is admittedly a bad term, but it was considered desirable to avoid the still more loosely applied "neurasthenia," despite the fact that the latter is official nomenclature.

The cases were such as in modern psychological terminology would be called "psychasthenia" or "pyscho-neurosis" (the form with "anxiety states"). No case of "suggestion-neurosis" —the hysteria of official nomenclature—was recorded.

In the causation of "anxiety states" the same predisposing factors alone or combined, usually the latter, were operative as occur in civil life, viz., actual ill-health, uncertainty as to future prospects, private and domestic worries, financial troubles, &c. Additional causes operative in the post-war service were (1) the necessity for realisation by officers of their peace-time responsibilities for public money, stores, &c., and (2) the effect overseas of tropical disease and climate and the monotony of "hot weather" life in lowering physical and mental efficiency.

Regarding actual flying as a predisposing cause: it is to be doubted whether the mental strain of flying under peace conditions is ever felt again so acutely by a pilot as it was before his first solo and during his early training.

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Flying over mountainous and hostile country, such as N.W. Frontier of India, with few places where a forced landing could be effected, is a strain if kept up for months on end. Apart from this, experimental pilots complain after a time of the "monotony" of flying.

The following table tends to bear out the conclusion that a healthy pilot, given that he has the mental aptitude for flying, is able to "repress" successfully any but normal reactions to the occasional risks of flying, and to remain unconscious of any other types of reaction.

The table also shows the ostensible senses to which the condition has been attributed by the patient or his board. No attempt has been made in it to follow up deeper underlying causes:—

TABLE SHOWING THE OSTENSIBLE CAUSATION OF FUNCTIONAL NERVOUS DISORDERS AMONG OFFICERS DURING 1920.

Causation.		Officers remaining in R.A.F., March 1921.	Officers no longer in R.A.F., March 1921.	Total.	
Flying stress	at Home	4	4	8	18
	Abroad	7	3	10	
Crash, recent	at Home	2	1	3	5
	Abroad	—	2	2	
Crash previous to 1920	at Home	—	11		12
	Abroad	1			
Strain of administrative work	at Home	8	3	11	18
	Abroad	2	5	7	
Disease	at Home	1	1	2	11
	Abroad	6	3	9	
Domestic and personal trouble		4	6		10
Non-flying accidents		1	1		2
Result of previous service		1	5		6
Prisoners of war		4	—		4
TOTAL		41	45		86

Section IV.—Medical Examination of Recruits.

The physical standards of recruits for the Royal Air Force are as follows:—

A.—Boys (under 18).

1. A boy must be free from any disease or physical defect calculated to unfit him for his duties in the Royal Air Force.

2. He must be fit to serve overseas in any climate, and likely to continue efficient.

3. The following are defects which render a boy unfit:—

(i) A personal history of acute rheumatic fever, more than one attack of unconsciousness, fits, chronic bronchitis or "winter cough," or asthma.

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(ii) A weak constitution, evidence of tubercular disease, &c.
(iii) Contraction or deformity of chest, joints or spine, flat foot.
(iv) Disease of the heart or lungs.
(v) Severe varicocele, varicose veins, or hæmorrhoids.
(vi) Hernia (including undescended testicle in canal).
(vii) Discharge from, or disease of, either ear.
(viii) Enlarged glands.

4. *Teeth.*—Seven deficient teeth or seven defective teeth which cannot be rendered serviceable by treatment will usually disqualify. There should be some sound opposing molars and incisors on both sides.

Credit is to be given for teeth that have not erupted.

5. *Standard of Vision.*—This is the same as for recruits in general.

6. *Physical Equivalents.*—No minimum standard of height, weight or chest girth is adopted.

B.—Recruits (over 18).

1. A recruit must be fit for general service at home or abroad (including India) in peace or war.

2. The physical standards and method of examination are similar to those in force in the Army, except that the standard of vision and method of examination employed is as follows:—

The recruit is placed with his back to the light, and his visual acuity tested by means of test types placed in a good light at a distance from him of six metres (20 English feet). Each eye is tested separately—

(*a*) If he can read D—24, or better, at the above distance with each eye without glasses he is considered "FIT."

(*b*) If he can read D—6 at the above distance with either eye, without glasses, and not less than D—60 with the other eye without glasses he is considered "FIT."

Boys who are successful at the competitive examinations for entry in May and November are medically examined at Cranwell, where they are afterwards trained.

Recruits in general are medically examined at—

All Royal Air Force stations by R.A.F. medical officers.
At R.A.F. recruiting depôts by serving officers or civil medical practitioners.

At the commencement of the year recruiting depôts were open at—

London.	Dublin.	Glasgow.
Birmingham.	Edinburgh.	Leeds.
Bristol.	Sheffield.	Liverpool.
Cardiff.		

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During the course of the year additional depôts were opened at—

Aberdeen.	Manchester.	Plymouth.
Belfast.	Middlesbrough.	Portsmouth.
Chatham.	Newcastle.	Reading.
Hull.	Norwich.	Southampton.
Nottingham.	Bournemouth.	

All recruits after a preliminary education test and satisfactory medical examination are sent to the R.A.F. depôt at Uxbridge, where they pass a final medical examination before the trade test (in the case of skilled trades).

The total number of accepted recruits during 1920 was 4,832, of which 499 were boys admitted to Cranwell

Table XVII. shows the average physique by ages. Full details were given on the medical entry form in 4,439 cases only, the remaining 393 being deficient in one or more particulars. This can be attributed to the many new recruiting depôts which were opened during the year and the difficulty experienced in many cases in obtaining the necessary details in the earlier stages.

Table XVIII. gives the average physique and ages of recruits classified by trades. The grouping is that adopted in the Census of 1921, but the main groups have been further condensed.

Table XIX. shows the average physique and ages grouped under localities.

Table XVII.—Accepted Recruits, 1920.

Average Physical Measurements classified by Age.

Age.	No.	Height.	Weight.	Chest (Max.).	Chest (Min.).	Chest (Range).
		Feet.	Lbs.	Ins.	Ins.	Ins.
15–17	497	5·4	109·7	31·4	28·8	2·7
18	1,184	5·5	125·0	34·4	31·9	2·5
19	731	5·5	128·0	34·8	32·3	2·5
20	432	5·5	130·0	35·2	32·6	2·5
21	330	5·5	132·5	35·5	32·9	2·6
22	231	5·5	132·9	35·4	32·8	2·6
23	186	5·5	132·2	35·4	32·9	2·5
24	156	5·5	133·3	35·6	33·0	2·6
25	127	5·5	135·0	35·6	33·1	2·5
26	100	5·5	137·5	36·1	33·5	2·6
27 and over	465	5·5	139·2	36·4	33·8	2·6
Total	4,439	5·5	127·9	34·7	32·1	2·6

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Table XVIII.—Accepted Recruits, 1920.

Average Physical Measurements and Ages classified by Trades.

Previous Occupation.	No.	Height.	Weight.	Chest (Max.).	Chest (Min.).	Chest (Range).	Age.
		Feet.	Lbs.	Ins.	Ins.	Ins.	Years.
Building Trades and Electricians.	402	5·5	129·9	35·1	32·6	2·5	21·4
Clerks - - -	397	5·5	129·2	34·9	32·3	2·6	20·9
Commercial, Public and Personal Services.	498	5·5	130·0	35·0	32·5	2·5	22·4
Metal Workers -	694	5·5	127·6	34·7	32·2	2·5	20·2
Schoolboys - -	371	5·3	108·8	31·2	28·5	2·7	15·4
Transport and Communication.	623	5·5	132·6	35·4	32·8	2·6	20·9
Indoor Trades other than above.	516	5·5	130·0	35·1	32·6	2·5	21·6
Outdoor Trades other than above.	502	5·5	130·3	35·2	32·6	2·5	20·7
Unstated - - -	436	5·4	126·8	34·8	32·1	2·6	21·3
Total - -	4,439	5·5	127·9	34·7	32·1	2·6	20·6

Table XIX.—Accepted Recruits, 1920.

Average Physical Measurements and Ages classified geographically.

Locality.	No.	Height.	Weight.	Chest (Max.).	Chest (Min.).	Chest (Range).	Age.
		Feet.	Lbs.	Ins.	Ins.	Ins.	Years.
Scotland - - -	502	5·4	128·9	35·0	32·3	2·7	21·3
England. East and South East.	932	5·5	127·5	34·4	31·9	2·5	20·3
England. North - West; North - East; North, Isle of Man.	679	5·5	127·9	34·8	32·3	2·5	20·6
England. London - -	1,063	5 5	127·8	34·9	32·3	2·6	20·7
Ireland; West of England and Wales.	796	5·5	128·4	34·4	31·9	2·5	20·6
Midlands (England) -	467	5·5	126·7	34·9	32·2	2·6	20·5
Totals - -	4,439	5·5	127·9	34·7	32·1	2·6	20·6

Section V.—Hygiene and Sanitation.

I.—United Kingdom.

Prior to April 1920, the responsibility for all the various details of sanitary administration in the Royal Air Force rested

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with the specialist sanitary officers of the Army Commands. It was found, however, that this system of dual control gave rise to frequent difficulties and after the reorganisation of the administrative system of the Royal Air Force into an Inland and a Coastal Area it became practically unworkable.

As a separate medical service had been approved it was decided that the Air Ministry should assume responsibility for the hygiene and sanitation of the Royal Air Force, the Army Hygiene Committee at the War Office continuing to act in an advisory capacity as occasion arose.

Officers with special qualifications were, therefore, appointed as advisors to the principal medical officers, and the control of the sanitary administration within their respective areas and commands was undertaken by them—a close liaison being maintained with the hygiene administration of the Army Commands and the civil health organisation.

A series of lectures on hygiene have been delivered to the cadets at Cranwell, whose final examination now includes a paper on this subject.

Arrangements have also been completed for the training in service hygiene of officers and men of the Royal Air Force at the Army schools of instruction.

The majority of the pathological examinations during the year have been carried out by the R.A.F. Bacteriologist at Finchley Hospital—but the special hygiene and pathological officers of the Army have continued to render every assistance, where it has not yet been possible to make full arrangements in the Royal Air Force, especially in the chemical and bacteriological examination of water and food supplies and in the investigation of isolated cases of cerebro spinal fever.

Physical Features and General Character of Stations.

The summary below gives information regarding the soil, altitude, and character of the surrounding country at the principal stations.

Station.	Soil.	Altitude, in Feet.	Surrounding Country.
Andover - -	Loam on chalk -	270	Flat and open.
Baldonnell (I.) -	Boulder clay on limestone.	300	„ „
Biggin Hill -	Stiff clay on chalk -	580	Enclosed by woods, and undulating.
Bircham Newton	Sandy loam (heathland).	240	Open, undulating.
Calshot - -	Shingle on clay -	10 to 20	Surrounded by water.
Cranwell - -	Thin loam on limestone.	150	Open, undulating.
Cattewater -	- - - - - -	15	Plymouth Harbour.
Duxford - -	Light loam - -	100	Open, undulating.

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Station.	Soil.	Altitude, in Feet.	Surrounding Country.
Digby	Sandy loam on limestone.	110	Sloping and open.
Donibristle (S.)	Sandy clay and clay	120	Enclosed by woods, undulating.
Eastleigh	Clay	30	Wooded.
Eastchurch	,,	20	Marshy land.
Farnborough	Loam (wet)	250	Buildings, and undulating.
Feltham	Loamy clay	60	Flat and open.
Frieston	Alluvial (reclaimed)	20	Flat and open (intersecting dykes).
Flowerdown	Loam on chalk	220	Open.
Felixstowe	Sand and gravel	15	Water and level ground.
Gosport	Light loam	25	Enclosed.
Grain	Heavy loam	10	Flat and marshy (intersecting dykes).
Hawkinge	Clay and sandy loam on chalk.	520	Wooded and undulating.
Henlow	Light loam	150	Open and flat.
Halton	Loam on chalk	400	Wooded and hilly.
Howden	Clay and sand	18	Level.
Kidbrooke	Loam on clay	110	Flat.
Kenley	Heavy clay	550	Wooded and hilly.
Lee-on-Solent	Clay on gravel	20 to 25	On shore of Solent.
Leuchars (S.)	Light loam	30	Fairly flat.
Manston	Clay on chalk	130	Open, undulating.
Martlesham	Sandy loam heathland.	90	Steeply undulating.
Netheravon	Loam on chalk	400	Open, undulating.
Orfordness	Loam (artificially drained).	5	Low, marshy and sandy dykes and ditches open.
Pulham	Clay and sandpits	130	Open.
Queensferry (S.)	Shingle	15	Foreshore.
Ruislip	Clay	135	Flat.
Rollestone	Chalk	400	Woody, in parts exposed.
Shotwick	Loam on sand (reclaimed).	15	Flat.
Spittlegate	Loam on limestone	400	Open and sloping.
Shrewsbury	Light loam	220	Enclosed and flat.
Upavon	Loam on chalk	400	Open, undulating.
Uxbridge	Clay	120	Open, flat.
Worthy Down	Loam on chalk	300	Open, undulating.

Surface drainage at Duxford, Shotwick, Uxbridge and Howden, owing to the extreme flatness of the sites, their low level, and the characters of the soil, presented difficulties which are being surmounted by extensive channelling and regrading of footpaths. Spittlegate, Netheravon and Upavon are very exposed, and the question of protecting these stations by the planting of trees, &c., is under consideration.

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At Halton the new permanent buildings are under construction on a site much more favourable than the present one.

Accommodation.—Despite the "war-time" conditions under which the personnel have been accommodated, the general housing arrangements have attained a fairly satisfactory level, and the best has now been done for comfort and health short of complete rebuilding of stations with permanent barracks.

The R.A.F. Permanent Building Committee has met frequently and visited R.A.F. stations and naval and military barracks in order to obtain at first hand knowledge and ideas as to the requirements of the R.A.F. in comparison with the requirements provided for the other Services. Its recommendations generally have been or are about to be carried out, but some considerable time is necessary before all the existing buildings are brought up to a standard approaching pre-war permanent buildings.

Owing to the temporary nature and construction of existing buildings occupied as living quarters, dampness of the walls and floors of the buildings, of bedding and temporarily discarded clothing (during night time), was one of the more serious questions presented.

Ventilation has received continued consideration, and improvements have been effected both in non-technical and technical buildings. Special consideration has been given to this matter in connection with guard rooms, lecture rooms, cinemas and workshops (more especially smithy and moulders' shops).

Overcrowding may be considered as non-existent, ample accommodation being provided to allow for floor space and cubic space, in most cases above the minimum laid down.

Heating of living quarters and workshops has been improved.

Cleanliness.—Much has still to be accomplished in the way of training officers and men to maintain stations at that standard of cleanliness which is an essential to perfect health and physical efficiency.

Water supply is ample in quantity and quality at all stations. Stations receive water either direct from a municipal supply or by deep wells sunk on the site. Examples of the latter method are Howden, Isle of Grain, Eastchurch, Upavon, Cranwell.

Analyses have been carried out as a routine and in special circumstances. Evidence of temporary pollution was found at Eastchurch No. 1 bore, due to surface washings making their way down the exterior of the bore; at Upavon due to a similar cause; at Digby, Bircham Newton and Harlescott, due to defective storage, lack of attention, and covers to tanks; and at Isle of Grain due to extraneous pollution. All defects were remedied.

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Food and Cooking.—Frequent inspection of rations both cooked and uncooked have shown the quality to be good throughout. No serious outbreaks of disease directly attributable to unsound food were reported during the year.

The question of cooking and serving of food was thoroughly gone into. Although increased attention has been paid to the protection of food supplies in institutes, cookhouses and officers' mess kitchens, there is still much to be desired in the cooking and serving of food. Much depends on the efficiency of the senior cook. More thoroughly trained cooks should in future produce improvement in this respect.

New issues of eating utensils have been made, but owing to the scarcity of earthenware, a substitute has been made by re-introducing enamelware. This arrangement is only temporary, and will cease as soon as sufficient earthenware is procurable, or an efficient substitute, such as aluminium ware, is introduced, and the existing stocks become unserviceable.

The cleaning of utensils is a matter which has been receiving increased attention, but greater supervision is still required, and the more abundant supply and use of hot water advisable. Frequently it has been observed that these utensils have been returned to the mess rooms only partly washed and grease marked.

Disinfection of blankets has been carried out as a routine where possible; and in every case of communicable disease clothing and bedding has been disinfected. Certain stations are provided with the necessary steam disinfectors, but where one is not provided, disinfection has been carried out at the nearest naval, military, or civil disinfecting station by arrangement. The provision of disinfectors for each station (or group of stations) is a matter which is receiving attention.

Conservancy.—Sewage systems are provided at almost all stations. During the year the pail system of latrines at Halton has been changed for water carriage. At Ascot, pails are used and night soil burnt. At Shotwick, owing to the low level of part of the station, a few of the latrines are still of the bucket type, the buckets being discharged into the main drain at a specially erected tipping platform. Pails at Calshot were converted to water carriage system. A part of the station at Isle of Grain below sea level also retains the use of pails.

The type of sewage disposal works is uniform and satisfactory. The supervision and working of these plants are ably carried out by experienced personnel.

Refuse Disposal has been carried out by incinerator at all stations. At Halton and Manston, Meldrum destructors are in use, and work on the whole satisfactorily. At Cranwell and Eastchurch, the Manlove Alliott type is in use. At most other stations brick incinerators are used with good results. These latter are being replaced or rebuilt as they become unserviceable. The lack of well-trained personnel for these duties has not

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always made the collection and disposal of refuse an easy matter. The difficulty of keeping refuse already burnt, *e.g.*, ashes, separate from combustible refuse is continually noted. A more liberal supply of ash-pits and refuse bins is necessary.

Fly Prevention.—The prevalence of flies during the year has not been marked owing partly to the unfavourable weather prevailing. At stations, moreover, strict precautions to do away with their breeding places, and to destroy the adults, have been carried out. Chief interest was centred at Henlow, where greater opportunities (in the form of a municipal refuse dump and manure deposits at the railway station) were available for the breeding of these insects, and improvement was obtained in co-operation with the authorities concerned; but it has not been found possible to do away completely with this source of nuisance.

The comparative freedom of personnel from body vermin was to be expected, having in view the adequate means available for personal hygiene. Any cases reported are amongst personnel returning from leave, or newly-joined recruits.

The destruction of rats has been made the object of special attention, with varying amounts of success. Returns show that stations as a rule are not infected with these vermin. The desirability of continued supervision and precautionary measures is being more thoroughly recognised. Poison has been provided by Royal Air Force Stores Depôts. In future, the Ministry of Agriculture and Fisheries will furnish fresh supplies as required.

Facilities for recreation are provided for all ranks. Sport and outdoor games of all kinds were freely indulged in. Additional facilities are being provided.

Indoor training has been carried out under good hygienic conditions. Defects in ventilation, lighting, and heating, where found, have been remedied.

Only three cases of disease which might be ascribed to any particular trade have been noted during the year, viz.:—Two cases of very mild lead poisoning among painters, and one case of X Ray dermatitis which was not contracted on duty in the Royal Air Force.

II.—Abroad.

Hygiene and sanitation has been carried out in co-operation with the Army medical authorities.

Section VI.—Vaccination and Inoculation.

While neither vaccination against small-pox, nor inoculation against typhoid and the paratyphoids are compulsory in the Royal Air Force, it has been the policy to point out to all ranks the importance of their being fully protected against these diseases. Officers and men proceeding overseas, or on active service, are more especially instructed regarding the benefits to

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be derived by such protection; and all such personnel are expected to have these operations performed immediately before proceeding, unless evidence of recent successful protection is obtained. Successful vaccination within two years and successful inoculation within six months are regarded as necessary for exemption for personnel so proceeding.

Vaccination.—With the exception of those bearing distinct marks of small-pox, all officers and airmen at home are considered unprotected unless vaccination is certified to have been successfully performed within five years, and marks are visible. Bearing this in mind, the majority of recruits, boys, and cadets are unprotected on entrance. Endeavours to have these vaccinated as soon as possible after joining up have been fairly successful. Lymph is supplied by the Government Lymph Establishment at Hendon.

The protection of personnel in the four previous years has been performed fairly thoroughly. The average percentage fully protected as shown by returns is over 70 per cent. The total number of primary vaccinations and re-vaccinations during the year among all classes at home is 6,814.

The following table gives an analysis of vaccinations amongst cadets, recruits and boys, as shown by returns :—

	No. Accepted.	No. Vaccinated.	Percentage Vaccinated.
Cadets	65	61	94
Recruits	4,333	2,564	59
Boys	499	429	86
TOTALS	4,897	3,054	62

Of the 3,760 remaining vaccinations performed, drafts proceeding overseas account for a large proportion; and young airmen who were not vaccinated as recruits but some time after joining their units are also included in this number. No definite figures of these latter are available for inclusion in the above table.

During the year, 2,523 officers and airmen were drafted overseas; 90 per cent. of these were fully protected before departure. In previous years also the percentage protected of drafts proceeding overseas has been very high, and the consequence is that the number of vaccinations required to be performed overseas is correspondingly low. In 1920, the total number of vaccinations performed overseas was 627, made up of 383 in Egypt and Palestine, 185 in India, 55 in Mesopotamia, and 4 amongst other R.A.F. personnel abroad.

Inoculation.—The average percentage of personnel at home protected by T.A.B. inoculation was 66 per cent., and during the year, 4,910 officers or airmen were inoculated.

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The total number of inoculations of T.A.B. vaccine performed overseas were 3,773, made up of 123 in the Rhine Command, 130 in the Mediterranean Area, 1,542 in Egypt and Palestine, 866 in Mesopotamia, and 1,112 in India.

The increased number of inoculations over vaccinations is due to the limited period of protection afforded by the former; the percentage fully protected is satisfactory.

Anti-cholera inoculation is carried out amongst personnel in India and Mesopotamia; the number of inoculations carried out during the year being 2,121 (India 1,136, Mesopotamia 985).

Section VII.—Summary of Pathological Work done in the Laboratories at R.A.F. Hospitals in the United Kingdom during 1920.

SPECIMENS EXAMINED.

Analysis :—		*Fæces for :—*	
Fæces	21	Dysentery	1,108
Gastric	21	Enteric Group	146
Urine	870	Helminths	25
Water	2	*Inoculations :—*	
Food	9	T.A.B., &c.	267
Blood :—		*Intravenous Injections*	261
Agglutinations	33	*Pathological Specimens*	27
Counts	1,183	*Purulent Discharge*	79
Cultures	25	*Peridental Smears*	17
Malaria Parasites	1,204	*Septic Fluids*	60
Wassermann Test	216	*Sputum :—*	
Cerebro-Spinal, Fluid for :—		General	37
Cell Count	10	T.B.	412
Cultures	8	*Throat Swabs :—*	
Meningococcus	6	Diph., &c.	609
Syphilis (Noguchi)	3	*Vaccines :—*	
Tubercle Bacillus	1	Preparation of autogenous.	87
Discharge for :—		Preparation in bulk :—	
Gonococcus	133	Influenza	70,000 cc.
Spirochætes	12	Gonococcus	20,000 cc.
		Staphylococcus	20,000 cc.

Section VIII.—Surgical Operations during 1920 at Home and Abroad.

Operation.	R.A.F. Sick Quarters.		R.A.F. Hospitals.		Royal Navy, Army, and other Hospitals.	
	Successful.	Failure.	Successful.	Failure.	Successful.	Failure.
Tumours :—						
Excision of Non-Malignant New Growths.	1	—	10	—	—	—
Excision of Cysts and Bursæ	3	—	16	—	13	—
Incision of Bursæ	—	—	—	—	1	—
Carried forward	4	—	26	—	14	—

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Operation.	R.A.F. Sick Quarters.		R.A.F. Hospitals.		Royal Navy Army, and other Hospitals.	
	Successful.	Failure.	Successful.	Failure.	Successful.	Failure.
Brought forward	4	—	26	—	14	—
Abscesses :—						
Acute	91	2	96	1	73	2
Chronic	—	—	5	—	11	—
Arteries :—						
Ligature of	—	—	4	—	2	—
Suture of	—	—	1	—	—	—
Veins :—						
Varix	—	—	8	—	12	—
Other Operations	—	—	1	—	—	—
Lymphatic :—						
Excision of Glands	—	—	6	1	3	—
Nerves :—						
Nerve Stretching	—	—	2	—	—	—
Suture of	—	—	1	—	—	1
Other Operations	—	—	1	—	2	—
Skin and Subcutaneous Tissues :—						
Excision of Scars	—	—	1	—	3	—
Plastic Operations	—	—	—	—	—	1
Removal of Nails	9	—	35	—	30	—
Other Operations	1	—	—	—	—	—
Bones :—						
Reduction of Fracture	4	—	10	—	8	—
Osteotomy	—	—	1	—	1	—
Un-united or Mal-united Fracture	—	—	1	—	2	1
Plating of	—	—	5	—	2	—
Necrosis or Caries	—	1	3	—	5	—
Removal of Sequestra	—	—	3	—	—	—
Insertion of Plates	—	—	1	—	1	—
Removal of Plates	—	—	4	—	1	—
„ „ Exostosis	—	—	1	—	—	—
Other Operations	—	—	5	—	4	1
Joints :—						
Hammer Toe	—	—	13	—	14	1
Hallux Valgus	—	—	3	—	4	1
Reduction of Dislocation	3	—	2	—	4	—
Incision	—	—	1	—	1	—
Excision	—	—	—	—	1	—
Aspiration	—	—	2	—	—	—
Removal of Semilunar Cartilage.	—	—	2	—	9	1
Reduction of Fracture	—	—	—	—	2	—
Other Operations	—	—	1	—	—	—
Muscles, Tendons, and Fasciæ :—						
Operation on Bursæ	1	—	—	—	—	—
Suture of Tendon	—	—	1	—	1	—
Amputations :—						
Finger	—	—	3	—	12	—
Fingers and Metatarsal	—	—	—	—	2	—
Toes „ „	—	—	—	—	2	—
Arm	—	—	2	—	3	—
Wrist	—	—	—	—	1	—
Leg	—	—	1	—	1	—
Thigh (stump)	—	—	1	—	—	—
Carried forward	113	3	253	2	231	9

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Operation.	R.A.F. Sick Quarters.		R.A.F. Hospitals.		Royal Navy, Army, and other Hospitals.	
	Successful.	Failure.	Successful.	Failure.	Successful.	Failure.
Brought forward	113	3	253	2	231	9
Skull and Brain :—						
Fractured Skull	—	—	—	—	—	1
Decompression	—	—	2	—	—	—
Other Operations	—	—	—	—	—	—
Eye :—						
Excision of Eyeball	—	—	2	—	—	—
Cauterisation	—	—	1	—	—	—
Mouth :—						
Removal of Tonsils	—	—	35	—	22	—
„ „ „ and Adenoids.	—	—	16	—	16	—
Nose :—						
Removal of Adenoids	—	—	3	—	2	—
„ „ Polypi	—	—	—	—	2	—
Cauterisation	—	—	2	—	1	—
Submucous Resection of Nasal Septum	—	—	33	—	11	—
Operation on Sinuses	—	—	3	—	1	—
Ear :—						
Opening Mastoid Antrum	—	—	—	—	—	1
Incision of Membrani Tympani	—	—	1	—	—	—
Radical Mastoid Operation	—	—	—	—	1	—
Other Operations	—	—	—	—	2	1
Larynx and Trachea :—						
Intra-Laryngeal Operation	—	—	1	—	—	—
Thorax :—						
Empyema	—	—	2	—	1	—
Aspiration	—	—	1	—	2	—
Abdomen :—						
Removal of Appendix	—	—	37	—	60	1
Hernia, Radical Cure	—	—	34	—	64	—
Perforated Gastric Ulcer	—	—	—	1	1	—
Duodenal Ulcer	—	—	1	—	1	—
Intestinal Obstruction	—	—	2	—	—	—
Exploratory Laparotomy	—	—	2	—	4	—
Other Operations on Kidney	—	—	2	—	—	—
Rectum and Anus :—						
Hæmorrhoids	—	—	23	2	20	—
Ischio-Rectal Abscess	—	—	4	—	—	1
Suture of Sphincters	—	—	—	1	—	—
Fistula in Ano	—	—	—	1	2	—
Bladder, Prostate and Urethra :—						
Cystoscopy	—	—	—	—	1	—
Dilatation of Urethra	—	—	4	—	3	—
Male Generative Organs :—						
Circumcision	4	—	38	—	57	—
Removal of Testis and Epididymis	—	—	6	—	7	—
Hydrocele	1	—	4	—	10	1
Incision of Prepuce	1	—	—	—	—	—
Varicocele	—	—	11	1	16	—
Dorsal Incision Penis	—	—	—	—	1	—
TOTALS	119	3	523	8	539	15

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Section IX.—Summary of Dental Treatment in the United Kingdom during 1920.

	By whom treated			
	R.A.F. Dental Officers.	Army Dental Officers.	Civilian Dental Officers.	Totals.
Fillings	9,485	1,171	1,043	11,376
Scalings	1,787	228	69	2,002
Extractions	10,821	304	583	11,609
Root fillings	1,170	104	234	1,508
No. of dentures supplied	*686	20	106	812
No. of upper dentures	405	—	67	—
No. of lower dentures	281	—	39	—
No. of patients supplied with dentures.	549	14	70	633
No. of repairs to dentures	257	—	28	—
No. of teeth supplied	5,310	—	881	—

Section X.—R.A.F. Nursing Service.

1. There were 15 cases of sickness among an average monthly strength of 63 during 1920. The average duration per case was 30·7 days.

2. There were three cases of invaliding from the service for sciatica, disseminated sclerosis and chronic laryngitis after 178, 86 and 49 days' treatment respectively.

There was an unusual case of fractured base of skull and superior maxilla caused by a patient running out of the door of a hospital ward and striking the nurse on the head. She was discharged to sick leave in December after 37 days' treatment.

There were no deaths to report during 1920.

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* Work carried out at R.A.F. Dental Mechanical Centre, Uxbridge.

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REPORT

ON THE

HEALTH OF THE ROYAL AIR FORCE

FOR THE YEAR 1921

(B)

The following Report on the Health of the Royal Air Force for the Year 1921 is issued for the information of all concerned.

By Command of the Air Council,

W. F. Nicholson

AIR MINISTRY,
February, 1923.

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THE
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AIR MINISTRY,
KINGSWAY,
LONDON, W.C. 2.

To The Secretary of the Air Council.

SIR,

I HAVE the honour to submit the accompanying report on the health of the Royal Air Force during 1921.

Statistics relating to the health of the Royal Air Force in India are included for the first time. Although these show a higher rate of sickness than elsewhere in the Royal Air Force, sickness figures for the total force show a distinct reduction compared with those of 1920.

Valuable research work on sandfly fever at Malta was carried out during the year and a summary is printed in Section 2, Chapter III.

A statistical analysis of the physique of the officers of the Royal Air Force in 1921 with special reference to the officer who is "fit for flying duties" is dealt with in Section 2, Chapter IV.

It has been found necessary during the year to revise disease nomenclature in two respects, as regards functional nervous disease and effects of heat. These points are discussed in the report.

The nosological, and other tables, where practicable, have been condensed still further in the present report compared with that for 1920.

I have the honour to be, Sir,
Your obedient Servant,
D. MUNRO,
Air Commodore,
Director of Medical Services.

October 1922.

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CHAPTER I.

HEALTH OF THE ROYAL AIR FORCE AS A WHOLE.

Section I.—General.

1. Table I. shows details of the total sickness in the Royal Air Force during 1921. R.A.F. personnel of the Rhine Army of Occupation and the Inter-Allied Aeronautical Commissions of Control are included in the United Kingdom figures, and account for the apparent contradiction of four cases being invalided to the United Kingdom. The average strength of these two units was only 195. The Mediterranean Littoral includes personnel in the Mediterranean group (average strength 538), Egypt and Palestine (2,640), and drafts *en route* to or from commands abroad (128). The "total abroad" figures include Mediterranean Littoral, Iraq and India, and are exclusive of the two small units referred to above, included under the United Kingdom figures. The numbers shown in italics represent sickness figures for 1920. United Kingdom figures are dealt with in Chapter II; those for abroad in Chapter III. The omission of sickness figures for 1920, as regards the Mediterranean Littoral, is due to the re-grouping of Egypt, Palestine and the Mediterranean group under this heading. This plan has been adopted because the prevailing types of disease in the Mediterranean group, which is chiefly represented by Malta, approximate to those in Egypt and Palestine. Further, the continued adoption of "The Rest of Europe" group in the 1920 report, which included Malta, and the many scattered units then in existence throughout the length and breadth of Europe, would, for 1921, have provided a total strength figure very much smaller than that of the other areas abroad.

2. It will be remembered that in the Health Report for 1920, sickness figures for India, for certain scattered units in the Middle East, and for drafts on board ship were not included. This omission has been rectified in the present report. Sickness in drafts on board ship, whose average total strength was only 128, does not justify separate consideration, and is included under the Mediterranean Littoral. As a result, although details of the sickness for 1920 are shown in italics under those for 1921, they cannot always be regarded as comparable.

3. Sickness in India was greater than that in any other area abroad, but in spite of this, the health of the total force has shown a marked improvement for the year. Thus the average duration of each case in days, the average number of days sickness for each individual and the ratio per 1,000 of strength of the number sick daily all show considerable reduction compared with 1920. Ratios per 1,000 of strength of fresh

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cases of sickness, including 48-hour cases, show an increase. The total non-effective rate caused by sickness is only slightly affected by these 48-hour cases, as will be seen on reference to the last two columns of Table I. Excluding them, the ratio per 1,000 of strength of fresh cases of sickness has dropped from 551·8 in 1920 to 497·3 in 1921.

4. The death rate shows an increase from 4·4 per 1,000 in 1920 to 4·7 in 1921. The R. 38 disaster was responsible for 24 deaths among R.A.F. personnel; deducting these, the death rate was 3·9.

5. Chart I. shows the monthly case incidence of sickness in ratios per 1,000 of strength in the United Kingdom, abroad and for the total force in 1920 and in 1921.

6. Table VII., Nosological Table, page 14, shows the sickness incidence, deaths, cases invalided to the United Kingdom, and cases finally invalided, in ratios per 1,000 of strength, average number sick daily and average duration of each case in days. As already mentioned, the United Kingdom figures include personnel of two small units in Central Europe. Four cases from these units were invalided to the United Kingdom during the year. They comprised one case of pulmonary tuberculosis, one of tachycardia and two of venereal disease. They are not, however, shown as invalided to the United Kingdom in the nosological table (Table VII., p. 14), as this would have necessitated a special column being inserted for their benefit alone. As compared with the corresponding table in the report for 1920, the nosological table has been considerably condensed in two directions; fewer divisions of diseases and injuries are shown, and the table deals with United Kingdom, abroad and total force only, the individual commands abroad not being shown as in the report for 1920.

7. Table VIII., page 28, gives further details of the diseases starred in Table VII., page 14, for the United Kingdom and for the various geographical areas abroad and for the total force.

8. In view of the small numbers involved some of the ratios given in both the nosological tables (VII. and VIII.) are admittedly not of great statistical value; on the other hand, others involving larger numbers are of statistical value. It was considered preferable, therefore, to give ratios for all diseases rather than to complicate the table by giving ratios in some instances and actual numbers in others. The strength of each area or group of areas has been inserted at the head of each column for reference, and at the bottom of each page the ratio per thousand corresponding to a single case occurring in each area or group of areas.

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CHART I. MONTHLY CASE INCIDENCE OF SICKNESS IN RATIOS PER 1000 OF STRENGTH IN THE UNITED KINGDOM, ABROAD AND FOR THE TOTAL FORCE IN 1920 & 1921. CASES OF 48 HOURS DURATION OR LESS ARE NOT INCLUDED.

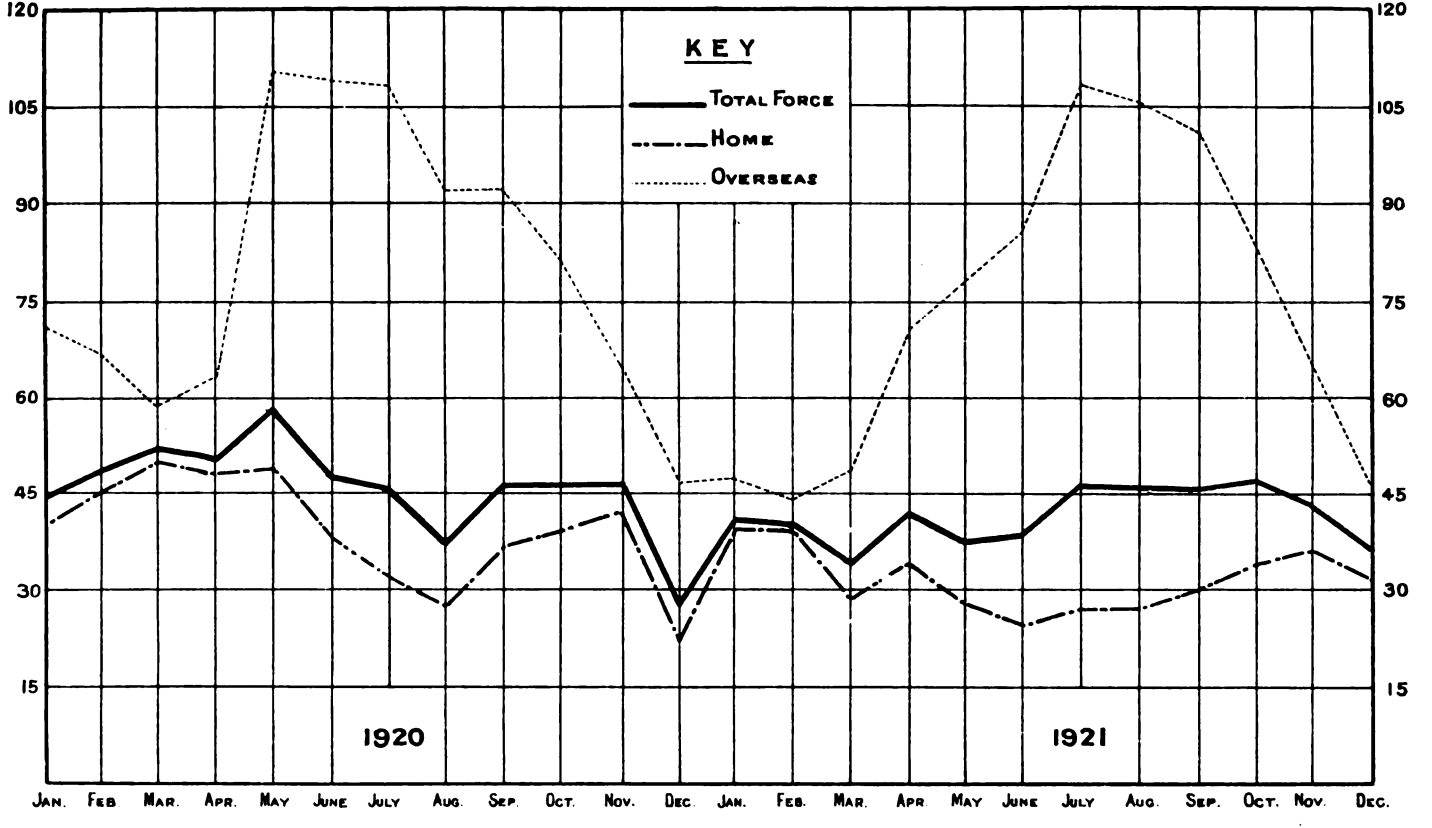

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TABLE I.—ANALYSIS OF SICKNESS AT HOME AND ABROAD.

Geographical Area.	Average Strength.	Fresh Cases of Sickness.			Deaths.	Invalided out of Service.	Invalided to United Kingdom.	Average Duration of each Case in Days.		Average No. of Days Sickness per head per Annum.		Ratios per 1,000 of Strength.						
												Fresh Cases of Sickness		Deaths.	Invalided out of Service.	Invalided to United Kingdom.	No. Sick daily.	
		Less than 48 hours.	More than 48 hours.	Total.				48-hour cases included.	48-hour cases. excluded.	48-hour cases included.	48-hour cases excluded.	48-hour cases included.	48-hour cases excluded.				48-hour cases included.	48-hour cases excluded.
United Kingdom :																		
1921 - -	21,936	9,862	8,418	18,280	86	218	4	9·8	19·8	8·2	7·6	833·3	383·8	3·9	9·9	20·5*	22·4	20·8
1920 - -	*21,454*	*8,178*	*10,021*	*18,199*	*59*	*454*	—	*14·4*	*25·0*	*12·2*	*11·7*	*848·2*	*467·0*	*2·8*	*21·2*	—	*33·4*	*31·9*
Mediterranean Littoral -	3,306	2,262	2,101	4,363	22	18	59	11·2	21·8	14·8	13·9	1,319·7	635·5	6·7	5·4	17·8	40·5	38·0
Iraq :																		
1921 - -	1,282	1,688	1,413	3,101	12	9	50	9·1	18·6	22·0	20·4	2,418·9	1,102·2	9·4	7·0	39·0	60·3	56·0
1920 - -	*868*	*640*	*1,383*	*2,023*	*17*	*6*	*18*	*10·7*	*15·0*	*25·0*	*23·9*	*2,330·7*	*1,593·4*	*19·6*	*6·9*	*20·7*	*68·4*	*65·3*
India - - -	1,798	3,386	2,154	5,540	14	13	62	7·5	17·2	23·3	20·6	3,081·2	1,198·2	7·8	7·6	34·5	63·8	56·4
Total Overseas :																		
1921 - -	6,386	7,336	5,668	13,004	48	40	171	9·2	19·2	18·6	17·0	2,036·3	887·6	7·5	6·3	26·8	51·0	46·8
1920 - -	*4,478*	*3,507*	*4,288*	*7,795*	*56*	*119*	*156*	*15·2*	*26·5*	*26·5*	*25·4*	*1,740·7*	*957·6*	*12·5*	*26·6*	*34·8*	*72·4*	*69·4*
Total Force :																		
1921 - -	28,322	17,198	14,086	31,284	134	258	175	9·5	19·6	10·5	9·7	1,104·6	497·3	4·7	9·1	26·6†	28·9	26·7
1920 - -	*25,932*	*11,685*	*14,309*	*25,994*	*115*	*573*	—	*14·7*	*25·5*	*14·7*	*14·0*	*1,002·4*	*551·8*	*4·4*	*22·1*	—	*40·2*	*38·4*

* Calculated on strength of R.A.F, personnel in Rhine Army of Occupation and Inter-Allied Aeronautical Commissions.
† Calculated on strength outside British Isles.
711 airmen invalided out of the service by the Discharge Centre medical board are not included above,

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9. Venereal disease and Upper Air Passage Infections, the commonest diseases affecting the health of the Royal Air Force as a whole, are dealt with in the present chapter. Dysentery, malaria and sandfly fever are discussed in detail in Chapter III. Table II. shows the frequency of attack among these diseases.

TABLE II.—THE FREQUENCY OF ATTACK IN CERTAIN DISEASES.

Individual Sickness.	Sickness abroad.			Sickness at home or abroad.	
	Dysentery	Malaria.	Sandfly.	Upper Air Passage Infections.	Venereal Diseases.*
Sick once	195	499	651	1,573	680
Sick twice	17	91	62	104	90
Sick three times	3	25	3	11	19
Sick four times	2	6	—	—	4
Sick five times	—	1	—	—	—
Total number of individuals sick	217	622	716	1,688	793
Total number of cases	246	785	784	1,814	933
Number of cases arising from each 100 individuals attacked :—					
1921	113	126	110	107	118
1920	*104*	*114*	*121*	*106*	*118*
Admission case rates, 1921	38·5	122·9	122·9	64·0	32·9 (36·1 for all cases)
1920	*23·9*	*49·3*	*185·9*	*66·7*	*(49·6 for all cases)*

10. Comparing 1920 and 1921 figures, the increased admission rates for dysentery and malaria appear to be associated with an increased individual case rate. Sandfly fever shows a decreased admission rate, and individual case rate. Upper Air Passage Infections, with practically the same admission rates during the two years, have also approximately the same individual case rates. Venereal disease shows the same individual rates in spite of a considerable decrease in the admission rate during 1921. The proportionately greater number of re-admissions for further treatment of gonorrhœa during 1921 is probably the main reason for this.

* Excludes cases of congenital syphilis and readmissions for further treatment of syphilis.

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Section II.—Venereal Disease.

1. Successful efforts were made throughout the force during 1921 to reduce the amount of venereal disease. The total case incidence per 1,000 of strength in 1921 was 36·1 for the total force, compared to 49·6 in 1920.

2. The primary rate, *i.e.*, the number of cases reporting for treatment for the first time after infection, and excluding admissions for further treatment, was 22·4 per 1,000 of strength, compared with 36·9 for 1920. Chart II. gives the monthly primary case incidence in ratios per 1,000 of strength in the United Kingdom, abroad, and for the total force in 1920 and in 1921. Further details are shown in Table VII., page 15, and Table VIII., page 28.

3. Prophylactic measures have been carried out with three definite objects in view :—

(i) To deter men from running the risk of infection.

(ii) To prevent the development of disease when the risk has been taken.

(iii) To prevent those who have contracted the disease spreading the infection.

As regards (iii) the proportion of patients showing relapses after treatment of primary gonorrhœa is unsatisfactory. Of a total of 741 cases, 466 were primary infections. There were 213 admissions for further treatment of gonorrhœa, all of which had been previously treated within twelve months. There were a further 50 cases, in which the disease had been contracted more than twelve months ago, and 12 cases in which no data were available.

4. A summary of the measures adopted under subheads (i) and (ii) is as follows :—

(i) *Educational.*

(*a*) Frequent lectures by medical officers to all personnel.

(*b*) Straight talks by combatant officers to airmen.

(*c*) Distribution of pamphlets to airmen and recruits on joining.

(*d*) Anti-venereal propaganda films, *e.g.*, biological (such as "The Gift of Life" for boys), and dramatic films for adults.

(ii) *Recreational.*

Besides athletics, social gatherings including dances, concerts, &c., have been encouraged.

(iii) *Prevention.*

(*a*) Police co-operation in the removal of prostitutes who tend to invade the vicinity of camps.

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(*b*) Established and well-equipped prophylactic rooms, conveniently situated in each camp.

(*c*) Immediate notification of all cases.

(*d*) Overseas, placing of brothel areas out of bounds.

5. All men acquiring venereal disease are questioned by their medical officer as to the measures of prophylactic disinfection employed and, according to the statement given, this is recorded as "Used properly," "Used improperly," or "Not used." The term "Used properly" is only applied to cases who have carried out the measures recommended within two hours after exposure. Cases are further sub-divided into those contracted on leave, and those contracted on the station. The former class comprise cases on leave away from their unit, who cannot avail themselves of the necessary disinfectant facilities either immediately before or after exposure. They may, however, have provided themselves with a calomel tube from the unit prophylactic room before proceeding on leave. Cases contracted on the station are able to use prophylactic disinfection shortly after exposure. The results obtained are shown below in Table III. The majority of the cases shown under the column "No data available" occurred in India.

TABLE III.—THE EFFECTS OF PROPHYLACTIC DISINFECTION ON THE CONTRACTION OF VENEREAL DISEASE DURING 1921.

	Contracted on Leave.				Contracted on Station.				Place of Contraction unknown.		Total.
	Prophylactic Disinfection used.		No Data Available.	Total.	Prophylactic Disinfection used.		No Data Available.	Total.	Possible Infection denied.	No Data as to Disinfection or where contracted.	
	Properly.	Improperly or not at all.			Properly.	Improperly or not at all.					
Gonorrhœa	9	81	14	104	77	219	47	343	13	6	466
Syphilis	2	15	3	20	15	41	29	85	8	0	113
Soft Chancre	2	4	6	12	5	9	23	37	3	2	54
Total	13	100	23	136	97	269	99	465	24	8	633

Section III.—Upper Air Passage Infections.

1. The case incidence of this group is slightly lower at 64·0 per 1,000 of strength of the total force in 1921, compared with the corresponding ratio of 66·7 in 1920. The average duration of each case in days was reduced from 9·8 in 1920 to 8·3 in 1921. Further details are given in Table VII., page 15, and Table VIII., page 28. It will be noticed that the case incidence for commands abroad is considerably higher than that for the United Kingdom, due mainly to the large amount of tonsillitis abroad. In Table VIII. the Mediterranean Littoral shows the

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CHART II. MONTHLY CASE INCIDENCE OF PRIMARY VENEREAL DISEASE IN RATIOS PER 1000 OF STRENGTH IN THE UNITED KINGDOM, ABROAD & FOR THE TOTAL FORCE IN 1920 & 1921.

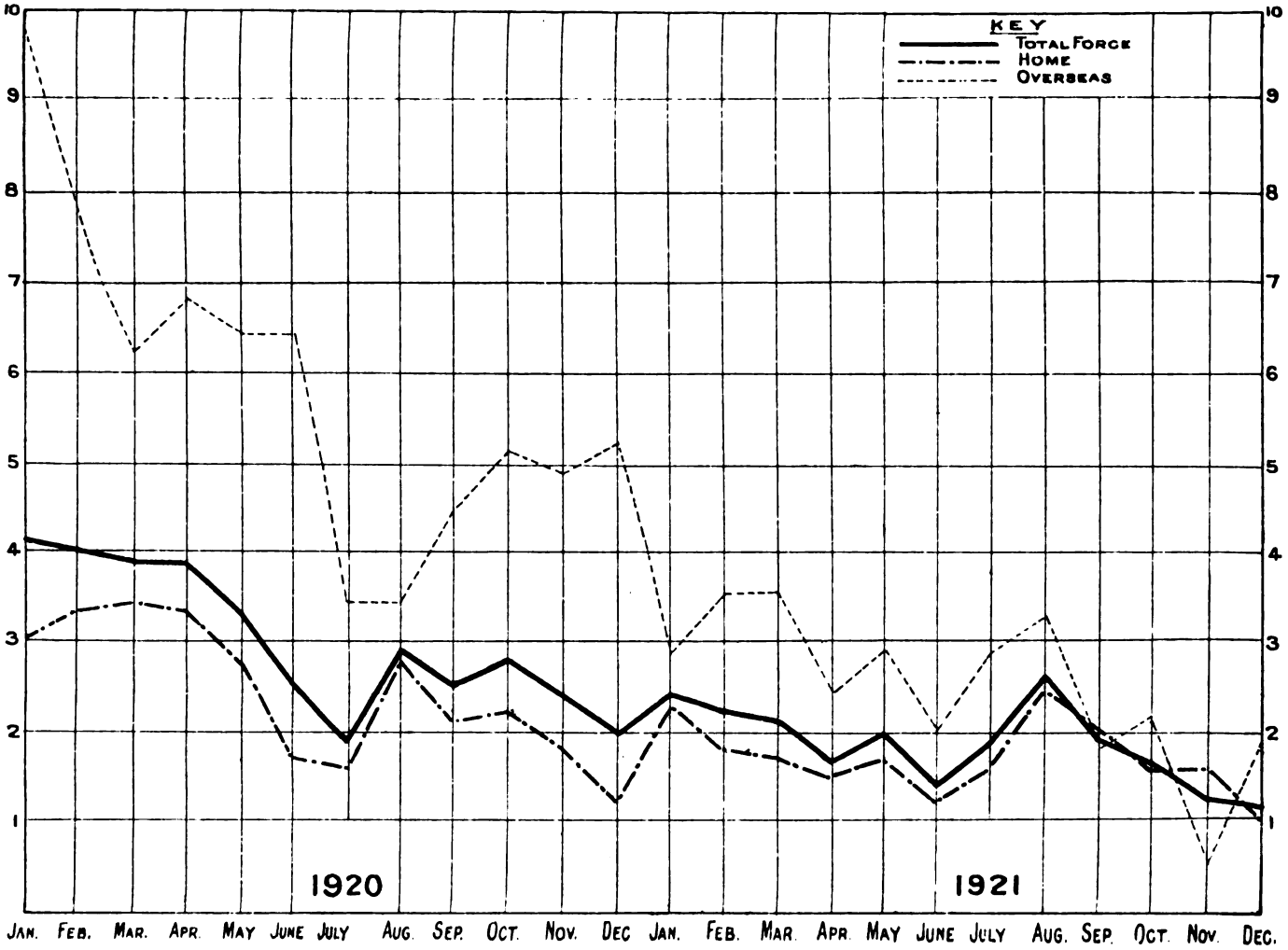

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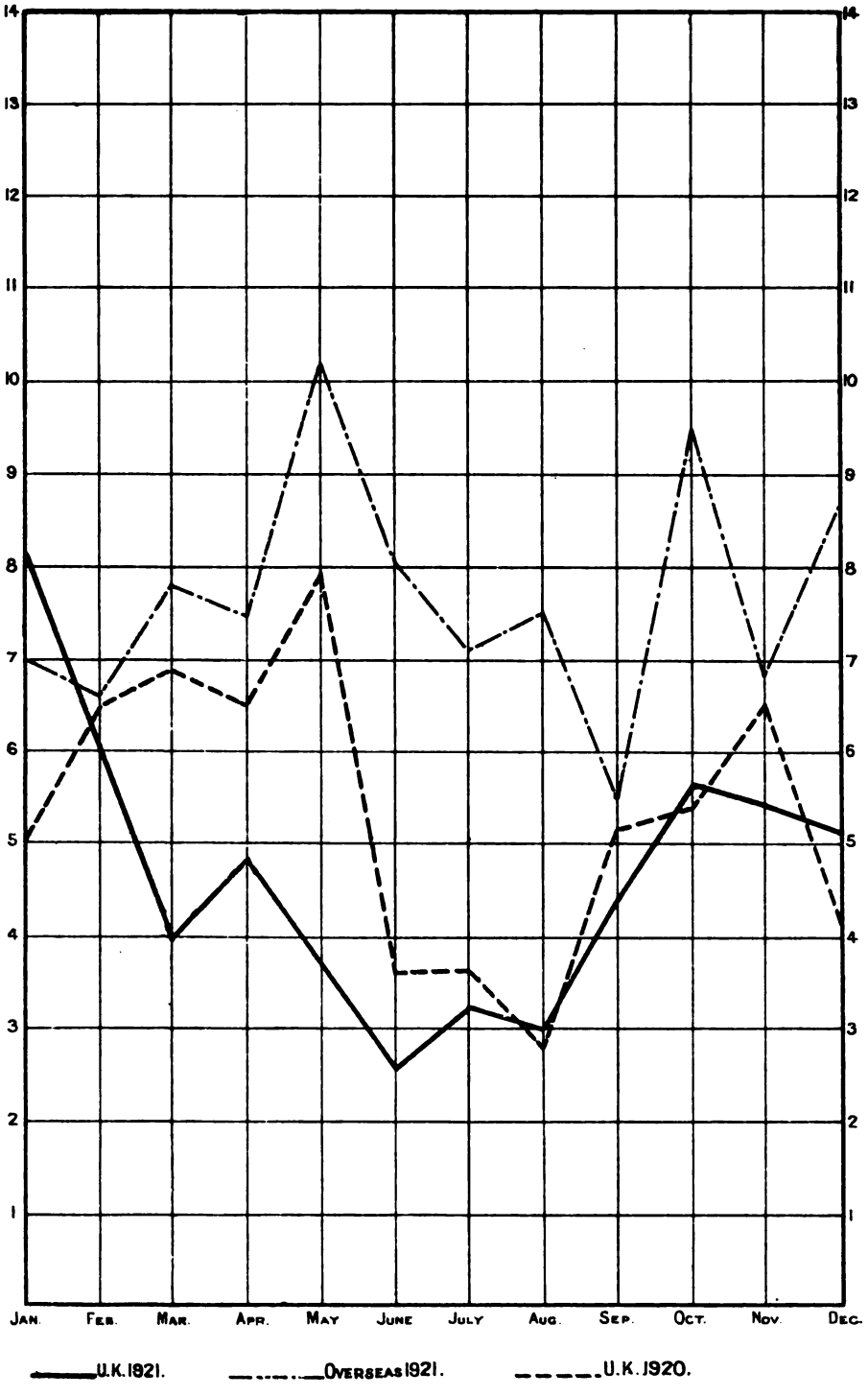
CHART III. MONTHLY CASE INCIDENCE OF UPPER AIR PASSAGE INFECTIONS IN RATIOS PER 1000 OF STRENGTH IN THE UNITED KINGDOM & ABROAD IN 1921 & IN THE UNITED KINGDOM IN 1920.



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highest rate of all areas abroad, as did Egypt and Palestine in 1920, the respective ratios per 1,000 of strength being 93·4 in 1920 and 110·4 in 1921. The case incidence in Iraq increased from 49·5 in 1920 to 89·7 in 1921. Chart III shows the monthly case incidence in ratios per 1,000 of strength in the United Kingdom and abroad in 1921 and in the United Kingdom in 1920. The marked differences in the graphs of the United Kingdom for 1920 and 1921 in March, April and May is probably largely due to the varying climatic conditions of the two years. It will be remembered that the weather in 1920 was remarkable for a wet spring, but in 1921 was particularly fine during that season. The two peaks in May and October in the graph for abroad are naturally composite ones. Table IV. shows the monthly case incidence per 1,000 of strength of the geographical areas concerned.

TABLE IV.—MONTHLY CASE INCIDENCE OF "UPPER AIR PASSAGE INFECTIONS" IN RATIOS PER 1,000 OF STRENGTH FOR AREAS ABROAD IN 1921.

	Jan.	Feb.	Mar.	Apr.	May	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Mediterranean Littoral -	8·9	8·5	8·4	7·1	12·1	11·1	8·7	8·5	5·7	9·8	8·0	13·2
Iraq - -	5·2	3·5	8·0	8·7	7·3	3·8	5·4	7·0	8·5	16·5	8·4	6·6
India - -	4·6	5·2	6·7	7·5	8·8	5·7	5·2	5·9	2·9	3·5	3·3	2·1

Section IV.—Disease and Injury among different Types of Unit.

1. Table X. gives an analysis of sickness under these heads at home and abroad where the same types of unit exist. Table IX. shows, in a different form, the comparative case incidence rates given in the former table. The figures in columns 1, 2, 4, 5, 7 and 8 represent the case incidence in any type of unit per 1,000 of strength as compared with the case incidence for the total force, this total force rate being taken as 100. It should be borne in mind that no comparison can be drawn, in the total force figures, between types of unit represented at home only and those which were also represented overseas, owing to the greater disease rates and (to a lesser extent) injury rates among units abroad. In types represented both at home and abroad, total figures again are not closely comparable, owing to the small strengths of such units abroad compared with those at home. The only exception to this is the squadron group, which has a greater strength abroad. Among the larger groups at home, the main difference from the corresponding figures in the report for 1920 is the improvement in the health of "personnel depôts"—mainly due to the elimination of men of low medical category who were concentrated in such units in

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1920. The headquarters group (consisting mainly of administrative units) and personnel depôts have the smallest amounts of sickness. Experimental units, flying schools, squadrons and repair depôts again show the highest proportion of injury. Disease rates generally abroad are considerably in excess of those at home, which is naturally to be expected, in view of climatic conditions, and it is suggestive that the adverse climatic conditions abroad play some part in liability to injury, as injury rates abroad are fifty per cent. in excess of those at home.

Section V.—Cause of Injury.

1. Table VI. on page 10, shows injuries, classified by cause and by nature of injury. The table is further sub-divided into injuries regarded as occurring on duty and those off duty. It will be noticed that injuries involving the lower extremity alone account for forty-seven per cent. of the total injuries. In flying and propeller accidents, the injuries were either general or confined to the upper part of the body. In only 14 cases, out of a total of 149 due to these causes, was the lower extremity alone involved. On the other hand, the lower extremity alone was injured in 436 cases out of a total of 610 due to athletics.

Apart from injuries, there were 408 cases of disease as the result of old injuries. The commonest forms were septic conditions, mainly cellulitis and abscess (189), recurrent synovitis of the knee (55) and neurasthenia (16).

2. *Flying accidents.*—(i) There were 114 cases of injury or death from flying accidents, as compared with 71 during 1920. The R.38 disaster was responsible for 25 out of the 114. Eighty cases occurred in the United Kingdom and 34 abroad, compared with 39 and 32 respectively for 1920. Two cases of invaliding occurred, both in respect of injuries sustained prior to 1921. Of the 60 deaths reported, 47 occurred in the United Kingdom and 13 abroad. Twenty-four of the former were caused by the destruction of the R.38, only three of the R.A.F. personnel aboard escaping with their lives. The case incidence ratio and death rate per 1,000 of strength for the total force were 4·0 and 2·1, compared with 2·7 and 1·1 respectively for 1920. The average duration of each case was 29·8 days, and, excluding R.38 casualties, 36·7 days, compared with 63·1 days in 1920. There was only one accident among cadets, and this was not serious. Sixty-nine of the 114 cases occurred among officers, of which 42 were at home and 27 abroad, resulting in 31 deaths. The case incidence ratio and death rate per 1,000 of strength of officers was 24·5 and 11·0, compared with 21·0 and 8·5 for 1920. Of the remaining cases 18, resulting in 12 deaths, occurred in the carpenter and rigger group; 16, with 11 deaths, in the fitter group; and of the remaining 10, 4 occurred amongst wireless operators, resulting in 2 deaths, 2 each among aircraft-hands and drivers, and single cases in the metal worker and other skilled trades groups.

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(ii) At the end of each year officers are medically examined as regards their physical fitness for flying, and at this examination officers are asked to state the number of hours they have flown during the previous twelve months. Particulars were actually obtained on this point in respect of 2,576 officers in 1921. (Reference is made to the medical examination of these officers in Chapter IV., page 57.) These 2,576 officers may be regarded as a very fair sample of the total strength of officers on ordinary duties, *i.e.*, excluding Air Attaches, Inter-Allied Aeronautical Commissions, and officers on special courses, &c. The total number of hours flown by these 2,576 officers during the year was 96,000. The average number of hours flown by fit officers on the general duties list (excluding those who flew less than 5 hours each per annum) was 70 hours per annum. If all fit officers on the general duties list are included the average becomes 52 hours per annum. If officers of the stores, accountants, chaplains, and medical branches, who are not called upon to fly in the normal course of their duties, are included, the average comes down to 38 hours per annum.

(iii) The following Table, No. V., shows the amount of flying carried out during the year, together with the numbers of fatal accidents :—

—	Machine flights.	Machine hours.	Fatal accidents.	Machine flights per fatal accident.	Machine hours flown per fatal accident.
Great Britain -	50,567	27,310	13	3,889	2,100
Abroad -	25,441	21,912	9	2,827	2,433
Total -	76,008	49,222	22	3,455	2,238

It will be observed from the above table that although the fatal accident risk for each flight was lower at home than abroad, a larger number of hours were flown abroad for each fatal accident than at home. This is accounted for by the fact that the average duration of each flight overseas was 49 minutes, as compared with an average duration of 32 minutes at home.

(iv) The risk of accident in taking off (apart from any overloading of the machine and the nature of the surface and extent of the aerodrome) is normally unaffected by the intended duration of the flight. The risk of accident in landing may, however, be expected to bear some relation to the duration of the flight, as the longer the flight the greater the strain on the physique of the pilot and also the greater the chance of forced landings under unfavourable conditions owing to some mechanical defect

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in the machine or engine or to weather conditions. An investigation was accordingly made with a view to determining, if possible, the extent of this relation. The statistics available for use whilst complete in themselves, covered the year 1921 only and were not therefore very comprehensive. In addition, matters were complicated by the fact that in certain of the commands abroad active service operations were being carried on, and this factor tended to vitiate comparisons with other overseas theatres or with the United Kingdom. The results brought out by the investigation were indefinite, inasmuch as they neither confirmed nor bore out the theory under discussion. Statistics relating to the question are gradually being accumulated, and investigation along these lines is being continued.

(v) From the material available it is possible to say that for each of the 24 officers killed during the year in flying accidents (other than R.38) over 4,000 hours were flown by officers.

(vi) Twelve N.C.O's or airmen were killed, and the following comparisons result :—

Machine hours flown per fatal accident - -	2,238
Machine hours flown per officer killed - -	2,050
Machine hours flown per N.C.O. or airman killed	4,100
Hours flown by Officers per officer killed -	4 000

It is not possible to calculate the number of hours flown by other ranks per airman killed.

TABLE VI.—CASES OF INJURY CLASSIFIED BY TYPE OF INJURY AND CAUSE.

Injury.	Cause of Injuries regarded as occurring on Duty.*							Cause of other Injuries.				Total, all causes.	Percentage of all cases of Injury.
	Flying.	Propeller.	Motor Car, Cycle and Lorry.	Pressure of Boots.	Heatstroke and Sunstroke.	Other Causes on duty.	*Total on duty.	*Athletics.	All Cases on leave.	Not Stated, or unknown.	*Other Accidents off duty.		
General injuries	73	6	15	—	87	23	204	11	5	1	35	256	13
Local injuries :													
Head and face	24	4	23	—	—	59	110	40	6	5	87	248	13
Trunk - -	6	1	5	—	—	29	41	32	4	2	21	100	5
Upper extremity - -	6	15	86	—	—	132	239	91	3	6	79	418	22
Lower extremity - -	5	9	30	66	—	171	281	436	12	19	154	902	47
Total -	114	35	159	66	87	414	875	610	30	33	376	1924	100
Percentage of total - -	5·9	1·9	8·3	3·4	4·5	21·5	45·5	31·7	1·6	1·7	19·5	—	100
Deaths - -	60	2	1	—	6	7	76	4	2	1	10	93	—

* All injuries due to athletics and games, whether organised (*i.e.*, on duty) or unorganised (off duty), have been grouped together.

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3. *Propeller Accidents.*—Accidents arising from swinging propellers whilst starting aeroplanes were 28 in number, compared with 25 in 1920. One case was fatal and two were invalided from the service. The average duration of each case was 50·1 days. Nineteen cases occurred in the fitter group; four in the carpenter and rigger group, and two amongst officers; single cases occurred in each of three other trade groups. Apart from these accidents, there were seven further cases of injury caused by propellers. The only fatal case was a test bench accident. The airman concerned, a skilled mechanic, was seen watching the revolving propeller of an engine under test, at the distance of a few feet. He then walked slowly right into the propeller. Local medical opinion was in favour of hypnotic attraction rather than suicide. The remaining cases were due either to catching the fingers in the (invisible) revolving propeller or to being struck by fragments of fractured propellers.

4. *Accidents starting motors.*—Seventy-one cases occurred compared with 102 during 1920. There were no resulting deaths nor invalids. The average duration of each case was 30·2 days, compared with 36 days in 1920. The commonest injury, as in 1920, was a Colles' fracture (29 cases). A further sixteen cases were due to other fractures of the bones of the forearm, and sprained wrists accounted for a further ten. Head and face injuries and leg injuries accounted for three each. The majority of cases occurred among the driver group (37) and the fitter group (17), the remaining cases being scattered fairly uniformly among the remaining trade groups. The preponderance of cases during the winter months is not so marked as in 1920, when there were 70 cases in the colder months of the year, compared with 32 from April to September. In 1921, 38 cases occurred in the winter, and 33 in the summer, months. It will be observed that injuries from this cause are not confined to the region of the wrist. Three types of causation may be distinguished :—

(i) By far the commonest, due to the direct impact of the starting handle on the hand at the moment of backfire, nearly always resulting in a Colles' fracture or sprained wrist.

(ii) Those due to the handle swinging round after the backfire and causing injury, usually of the arm above the wrist. The fractures of the radius and ulna, apart from Colles' fracture, were nearly all caused in this way. Dependent on the size of the starting handle and its height from the ground, head and face and lower extremity, injuries may more rarely result.

(iii) A more uncommon type of case occasionally occurs owing to the starting handle throwing the operator against the radiator or mud guards of the vehicle.

5. *Motor Accidents other than those caused by starting motors.*—One hundred and fifty cases occurred, compared with 138 in

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1920, resulting in one death and one case invalided. The average duration of each case for all types of accidents was 25·8 days. As before, the commonest type of accident was due to motor cycles (81 cases); sixty of these cases occurred off-duty, mainly among officers (35), fitters (12), and drivers (2); nineteen accidents were reported as occurring on duty, mainly among the driver group (12): whether the accident occurred "on duty" or not was unstated in the remaining two cases. Of the remaining accidents, 38 were caused by lorries and tenders; 19 due to falls from them. Twenty-six cases were caused by motor transport; R.A.F. vehicles accounted for ten and civilian transport for twelve; no details as to the ownership of the vehicle are known in the remaining four cases. Motor-car accidents accounted for a further five cases.

6. *Wounds in action.*—Five of the six cases reported occurred in Ireland, the remaining one in Iraq. Two were fatal. The average duration of each case was 45·5 days.

7. *Accidental gunshot wounds.*—Twenty cases were reported, resulting in two deaths and one case of invaliding. The average duration of each case was 43·6 days. Eight were accidentally shot, seven were injured by accidental detonator explosions, and five by accidental self-inflicted gunshot wounds.

8. *Other accidents on duty.*—There were 355 cases, compared with 257 in 1920, resulting in three deaths and six final invalids. The average duration of each case was 19·9 days, compared with 24·2 in 1920.

9. *Accidents due to athletics.*—Six hundred and ten cases occurred, compared with 540 during 1920, the case incidence per 1,000 of strength being 21·5. Bathing accidents accounted for the four deaths. The average duration of each case was 16·3 days, as compared with 16·8 days in 1920. Four hundred and thirty-one cases were due to football, and these accidents accounted for 71 per cent. of all accidents due to athletics both in 1920 and 1921. The commonest injuries at football were traumatic synovitis of the knee (109 cases), sprained ankle (86), contusions and abrasions lower extremity (64), other knee injuries (33), fractured fibula (13), fractured clavicle (10).

10. *Other accidents off duty.*—Three hundred and eleven cases occurred, resulting in eight deaths and one final invaliding, compared with 241 cases with no deaths in 1920. The average duration of each case was 17·7 days, compared with 18·4 days in 1920. Three deaths were due to burns, the result of a petrol explosion in a washhouse at Aboukir; two to injuries sustained through being run over by trains; two to drowning, and the remaining case to suffocation in a drunken stupor.

11. *Accidents on leave.*—There were thirty accidents on leave, the same number as in 1920. There were two deaths and one

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case was finally invalided. The average duration of each case was 37·9 days, compared with 34·4 days in 1920.

12. *Bites.*—Thirteen cases occurred with an average duration of 17·2 days. Nine of the ten dog bites reported occurred abroad and received anti-rabic treatment, which was also given in a case of monkey-bite. There were two admissions for scorpion and jelly-fish stings respectively.

13. *Other accidents included* :—(i) Injuries to feet, mainly septic blisters and abrasions, caused by pressure of boots (66 cases), compared with 64 in the previous year. The average duration of each case was twelve days, compared with 8·8 in 1920.

(ii) Injuries of unknown cause were 33 in number, with an average duration of 8·8 days. The only fatal case was that of an airman who was discovered with a fractured skull in Baghdad, and died without recovering consciousness.

(iii) There were two cases of suicide, compared with seven in 1920.

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TABLE VII.—NOSOLOGICAL TABLE FOR THE UNITED KINGDOM, ABROAD, AND THE TOTAL FORCE, 1921.

Disease.	United Kingdom. Average Strength, 21,936.					Abroad. Average Strength, 6,386.						Total Force. Average Strength, 28,322.				
	Ratio per 1,000 of Average Strength.			Averages.		Ratio per 1,000 of Average Strength.				Averages.		Ratio per 1,000 of Average Strength.			Averages.	
	Cases.	Deaths.	Finally Invalided.	No. Sick Daily.	Duration of Case.	Cases.	Deaths.	Invalided to United Kingdom.	Finally Invalided.	No. Sick Daily.	Duration of Case.	Cases.	Deaths.	Finally Invalided.	No. Sick Daily.	Duration of Case.
Communicable Diseases.				No.	Days.					No.	Days.				No.	Days.
Diphtheria	0·9	—	—	1·5	28·7	0·6	—	—	—	0·7	62·5	0·8	—	—	2·2	34·6
*Dysentery	1·0	—	0·05	2·8	46·8	38·5	0·16	1·88	—	22·5	33·4	9·5	0·04	0·04	25·4	34·5
*Enteric fever and Paratyphoid	0·1	—	—	0·4	72·5	4·8	0·31	0·63	—	7·0	82·4	1·2	0·07	—	7·4	81·8
*Enteritis, acute (including gastro-enteritis)	4·4	—	—	1·7	6·6	59·5	—	—	—	9·0	8·6	16·8	—	—	10·7	8·2
Impetigo contagiosa	14·5	—	—	17·1	19·5	10·8	—	—	—	2·9	15·5	13·7	—	—	20·0	18·8
*Influenza (including influenzal pneumonia)	26·4	0·05	—	13·4	8·5	9·2	0·16	—	—	1·2	7·6	22·6	0·07	—	14·7	8·4
*Malaria	3·7	—	—	4·6	20·9	122·9	0·16	1·72	—	27·9	13·0	30·6	0·04	—	32·5	13·7
Measles	0·5	—	—	0·6	22·8	0·9	—	0·16	—	0·3	18·7	0·6	—	—	0·9	21·3
Mumps	2·3	—	—	3·3	23·2	0·6	—	—	—	0·2	22·2	1·9	—	—	3·5	23·1
Pneumonia, lobar	1·6	0·14	—	3·7	37·5	1·4	0·31	—	—	1·1	46·3	1·6	0·18	—	4·8	39·3
*Pyrexia of unknown origin	4·3	—	—	1·8	6·9	13·8	—	—	—	3·7	15·4	6·5	—	—	5·5	11·0
Rubella	0·8	—	—	0·8	16·4	0·2	—	—	—	0·0	10·0	0·6	—	—	0·8	16·1
*Sandfly fever	—	—	—	—	—	122·9	—	—	—	17·1	8·0	27·7	—	—	17·1	8·0

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*Scabies	14·3	—	—	8·9	10·3	4·2	—	—	—	0·8	10·9	12·0	—	—	9·7	10·4
Scarlet fever	2·7	—	—	6·1	36·9	0·5	—	—	—	0·3	42·0	2·2	—	—	6·4	37·1
Smallpox	—	—	—	—	—	0·5	—	—	—	0·5	59·7	0·1	—	—	0·5	59·7
*Tuberculosis.																
Respiratory	1·2	—	1·32	5·1	71·2	1·6	0·47	1·41	0·31	4·1	149·6	1·3	0·11	1·09	9·2	93·0
Other	0·4	0·05	0·27	3·7	169·7	0·6	—	0·31	0·47	1·5	140·0	0·4	0·04	0·32	5·2	159·8
Total—Tuberculosis	1·6	0·05	1·60	8·8	94·4	2·2	0·47	1·72	0·78	5·6	146·8	1·7	0·14	1·41	14·4	109·7
*Acute Upper Air Passage Infections.																
Laryngitis	2·6	—	—	1·6	10·0	1·2	—	—	—	0·2	10·6	2·3	—	—	1·8	10·0
Inflammation of fauces, nasopharyngitis and pharyngitis	28·8	—	—	12·2	7·0	38·0	—	—	—	4·1	6·1	30·9	—	—	16·3	6·8
Rhinitis, acute catarrhal	5·1	—	—	2·1	6·8	5·3	—	—	—	0·5	5·8	5·2	—	—	2·6	6·5
Tonsillitis (including quinsy and Vincent's Angina)	19·3	—	—	12·3	10·6	47·8	—	—	—	8·2	9·8	25·7	—	—	20·5	10·3
Total—Upper Air Passage Infections	55·8	—	—	28·1	8·4	92·4	—	—	—	13·1	8·1	64·0	—	—	41·2	8·3
*Venereal Disease.																
Gonorrhœa, acute	16·0	—	—	54·3	56·3	17·8	—	—	—	26·0	83·4	16·4	—	—	80·3	62·9
Gleet, relapse and other complications	9·4	—	—	23·0	41·0	11·0	—	0·16	0·16	11·0	57·6	9·7	—	0·04	34·0	45·2
Total—Gonorrhœa	25·4	—	—	77·3	50·7	28·8	—	0·16	0·16	37·1	73·6	26·2	—	0·04	114·4	56·3

N.B.—For "United Kingdom," the ratio 0·05 = one case of sickness; for "Abroad," the ratio 0·16 = one case of sickness; for "Total Force," the ratio 0·04 = one case of sickness.

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TABLE VII.—NOSOLOGICAL TABLE FOR THE UNITED KINGDOM, ABROAD, AND THE TOTAL FORCE, 1921—*cont.*

Disease.	United Kingdom. Average Strength, 21,936.					Abroad. Average Strength, 6,386.						Total Force. Average Strength, 28,322.				
	Ratios per 1,000 of Average Strength.			Averages.		Ratios per 1,000 of Average Strength.				Averages.		Ratios per 1,000 of Average Strength.			Averages.	
	Cases.	Deaths.	Finally Invalided.	No. Sick Daily.	Duration of Case.	Cases.	Deaths.	Invalided to United Kingdom.	Finally Invalided.	No. Sick Daily.	Duration of Case.	Cases.	Deaths.	Finally Invalided.	No. Sick Daily.	Duration of Case.
Communicable Diseases—*cont.*				No.	Days.					No.	Days.				No.	Days.
Syphilis :																
Primary admissions	4·1	—	0·05	10·6	43·7	8·0	—	—	—	8·6	61·6	4·9	—	0·04	19·2	50·2
Admissions for further treatment -	1·9	—	—	4·3	37·3	7·2	—	—	—	2·8	22·4	3·1	—	—	7·1	29·5
Total—Syphilis	6·0	—	0·05	14·9	41·6	15·2	—	—	—	11·4	43·0	8·0	—	0·04	26·3	42·2
Soft chancre - -	1·0	—	—	1·9	33·5	5·2	—	—	—	3·7	40·9	1·9	—	—	5·6	38·0
Total—Venereal diseases -	32·3	—	0·05	94·2	48·5	49·2	—	0·16	0·16	52·2	60·7	36·1	—	0·07	146·4	52·2
Other communicable diseases -	6·2	0·09	0·23	6·1	16·5	5·0	—	0·16	0·16	2·7	30·8	5·9	0·07	0·21	8·8	19·3
TOTAL — COMMUNICABLE DISEASES -	173·5	0·32	1·91	203·9	19·6	539·8	1·57	6·42	1·10	169·0	17·9	256·1	0·60	1·73	372·9	18·8

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Carriers - -	0·8	—	—	1·2	24·6	0·3	—	—	—	0·1	22·0	0·7	—	—	1·3	24·3
Contacts - -	4·6	—	—	2·5	9·2	0·6	—	—	—	0·2	15·0	3·7	—	—	2·7	9·4
Other Common Diseases due to Infection.																
Abscess, hand and finger - -	2·8	—	—	2·5	15·0	3·3	—	—	—	0·9	16·1	2·9	—	—	3·5	15·3
Abscess, other -	3·9	—	—	3·2	13·5	6·6	—	—	—	1·2	10·1	4·5	—	—	4·3	12·4
Boils - - -	6·3	—	—	4·2	11·0	11·9	—	—	—	2·5	12·2	7·6	—	—	6·7	11·4
Carbuncles - -	0·7	—	—	0·6	13·5	1·7	—	—	—	0·4	12·8	0·9	—	—	0·9	13·2
Cellulitis - -	6·3	—	—	4·8	12·7	17·7	—	—	—	4·1	13·3	8·9	—	—	8·9	12·9
Lymphadenitis and lymphangitis	3·0	—	—	2·8	15·2	4·2	—	—	—	1·4	19·2	3·3	—	—	4·2	16·4
Osteo-myelitis, peri-ostitis, osteitis -	1·1	—	0·18	2·7	39·6	1·9	—	0·16	—	1·1	33·8	1·3	—	0·14	3·8	37·7
Pyæmia, septicæmia	—	—	—	—	—	0·3	0·31	—	—	0·1	10·5	0·1	0·07	—	0·1	10·5
Ulcer - - -	0·3	—	—	0·3	18·3	3·3	—	—	—	1·0	17·9	1·0	—	—	1·3	18·0
TOTAL — OTHER COMMON DISEASES DUE TO INFECTION -	24·5	—	0·18	21·1	14·3	50·9	0·31	0·16	—	12·7	14·3	30·5	0·07	0·14	33·8	14·3
Effects of Parasites	1·2	—	—	0·4	5·0	1·6	—	—	—	0·3	10·1	1·3	—	—	0·7	6·4
Diseases of Nervous System and Brain.																
Neuritis - -	0·7	0·05	0·05	1·1	25·4	1·1	—	0·63	—	1·7	90·1	0·8	0·04	0·04	2·8	45·1
Nerve paralysis -	0·1	—	—	0·6	112·0	0·6	—	0·16	—	0·7	59·8	0·2	—	—	1·3	77·2
Epilepsy (including observation cases)	1·6	—	0·68	2·1	22·1	1·2	—	0·47	0·31	1·7	75·6	1·5	—	0·60	3·7	32·3

N.B.—For "United Kingdom," the ratio 0·05 = one case of sickness; for "Abroad," the ratio 0·16 = one case of sickness; for "Total Force," the ratio 0·04 = one case of sickness.

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TABLE VII.—NOSOLOGICAL TABLE FOR THE UNITED KINGDOM, ABROAD, AND THE TOTAL FORCE, 1921—*cont.*

Disease.	United Kingdom. Average Strength, 21,936.					Abroad. Average Strength, 6,386.						Total Force. Average Strength, 28,322.				
	Ratios per 1,000 of Average Strength.			Averages.		Ratios per 1,000 of Average Strength.				Averages.		Ratios per 1,000 of Average Strength.			Averages.	
	Cases.	Deaths.	Finally Invalided.	No. Sick Daily.	Duration of Case.	Cases.	Deaths.	Invalided to United Kingdom.	Finally Invalided.	No. Sick Daily.	Duration of Case.	Cases.	Deaths.	Finally Invalided.	No. Sick Daily.	Duration of Case.
Diseases of Nervous System and Brain —*cont.*				No.	Days.					No.	Days.				No.	Days.
Neurasthenia	2·7	—	0·59	4·5	27·5	6·6	—	3·76	0·31	4·7	41·2	3·6	—	0·53	9·2	33·1
Mental diseases (including observation cases)	1·4	—	0·87	4·3	50·7	1·6	—	1·41	0·47	4·6	168·8	1·4	—	0·78	8·9	79·5
Other diseases of nervous system	2·4	0·09	0·41	2·4	17·2	3·0	—	0·31	—	2·2	42·1	2·5	0·07	0·32	4·6	23·9
TOTAL — DISEASES OF NERVOUS SYSTEM AND BRAIN	8·9	0·14	2·60	15·1	28·2	14·1	—	6·73	1·10	15·6	63·2	10·1	0·11	2·26	30·7	39·3
Diseases of the Eye.																
Infections	4·3	—	0·18	5·6	21·4	2·2	—	—	—	0·7	17·9	3·8	—	0·14	6·3	21·0
Defects of vision	1·5	—	0·36	1·2	13·6	1·6	—	0·94	0·31	1·9	70·9	1·5	—	0·35	3·2	27·0
TOTAL — DISEASES OF EYE	5·8	—	0·55	6·8	19·4	3·8	—	0·94	0·31	2·6	40·0	5·4	—	0·49	9·4	22·7

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Diseases of Ear and Nose.																
Otitis media, acute	0·6	—	—	0·8	23·2	1·6	—	—	—	0·4	12·9	0·8	—	—	1·2	18·7
Otitis media, chronic	2·6	—	0·78	4·3	27·6	4·8	—	0·16	0·16	1·4	16·4	3·1	—	0·64	5·7	23·7
Other diseases of ear and nose -	5·3	—	0·27	7·1	22·2	6·1	—	0·31	0·16	1·5	14·4	5·5	—	0·25	8·6	20·3
TOTAL — DISEASES OF EAR AND NOSE -	8·5	—	1·05	12·2	23·9	12·5	—	0·47	0·31	3·3	15·0	9·4	—	0·88	15·5	21·3
Diseases of the Circulatory System.																
Endocarditis, acute	0·1	0·09	0·05	0·5	87·0	0·3	0·16	0·16	—	0·5	92·5	0·1	0·11	0·04	1·0	89·8
Valvular disease of the heart - -	0·7	—	0·32	1·0	25·7	2·2	—	0·94	0·63	3·3	85·0	1·0	—	0·39	4·3	54·3
Disease of myocardium - - -	0·5	0·09	—	0·5	15·6	0·9	—	—	—	0·2	12·2	0·6	0·07	—	0·7	14·4
Disordered action of the heart - -	2·4	—	0·41	3·4	23·9	8·1	—	1·57	0·16	6·4	44·6	3·7	—	0·35	9·8	34·3
Varix - - - -	1·0	—	—	1·8	31·8	0·9	—	—	—	0·5	27·3	1·0	—	—	2·3	30·8
Other diseases of the circulatory system - -	0·6	—	—	0·9	23·7	3·0	—	0·94	0·16	2·0	37·4	1·2	—	0·04	2·9	31·6
TOTAL — DISEASES OF CIRCULATORY SYSTEM - - -	5·2	0·18	0·78	8·2	25·9	15·5	0·16	3·60	0·94	12·7	46·9	7·6	0·18	0·81	20·9	35·6
Diseases of Lymphatic system and ductless glands -	0·1	0·05	0·09	0·5	63·7	0·2	—	0·16	0·16	0·2	76·0	0·1	0·04	0·11	0·7	66·8

N.B.—For "United Kingdom," the ratio 0·05 = one case of sickness; for "Abroad," the ratio 0·16 = one case of sickness; for "Total Force," the ratio 0·04 = one case of sickness.

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TABLE VII.—NOSOLOGICAL TABLE FOR THE UNITED KINGDOM, ABROAD, AND THE TOTAL FORCE, 1921—*cont.*

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	Ratios per 1,000 of Average Strength.			Averages.		Ratios per 1,000 of Average Strength.				Averages.		Ratios per 1,000 of Average Strength.			Averages.	
	Cases.	Deaths.	Finally Invalided.	No. Sick Daily.	Duration of Case.	Cases.	Deaths.	Invalided to United Kingdom.	Finally Invalided.	No. Sick Daily.	Duration of Case.	Cases.	Deaths.	Finally Invalided.	No. Sick Daily.	Duration of Case.
				No.	Days.					No.	Days.				No.	Days.
Diseases of the Respiratory System.																
Bronchitis - -	10·4	—	0·18	7·3	11·8	15·2	—	0·94	0·47	5·6	21·2	11·4	—	0·25	12·9	14·6
Asthma - -	0·8	—	0·23	0·8	15·7	1·2	—	—	—	0·1	6·8	0·9	—	0·18	0·9	12·9
Broncho - pneumonia - -	0·3	0·09	—	0·3	16·3	0·8	0·16	0·16	—	1·0	70·4	0·4	0·11	—	1·2	40·9
Pleurisy - -	2·1	0·05	0·23	4·1	32·0	4·7	—	0·31	0·16	2·6	31·6	2·7	0·04	0·21	6·7	31·8
Other diseases of respiratory system - - -	0·5	—	—	0·5	19·5	0·2	—	0·16	—	0·1	52·0	0·4	—	—	0·7	22·5
TOTAL — DISEASES OF RESPIRATORY SYSTEM - - -	14·0	0·14	0·64	13·0	15·4	22·1	0·16	1·72	0·63	9·5	24·5	15·8	0·14	0·64	22·5	18·3
Diseases of teeth and gums -	3·7	—	—	2·5	11·1	5·2	—	—	—	1·0	11·1	4·0	—	—	3·5	11·1

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Diseases of the Digestive System.																
Hypertrophy of tonsils	2·4	—	—	2·8	19·4	0·3	—	—	—	0·3	60·5	1·9	—	—	3·1	20·9
Gastritis, acute	1·4	—	—	0·6	7·2	4·8	—	—	—	0·9	11·1	2·2	—	—	1·5	9·2
Gastritis, chronic	0·2	—	0·05	0·3	28·0	0·3	—	—	—	0·2	31·5	0·2	—	0·04	0·5	29·2
Dyspepsia	3·2	—	—	3·1	16·0	4·1	—	—	—	0·9	12·2	3·4	—	—	3·9	15·0
Appendicitis	6·7	0·09	0·05	16·0	39·7	4·8	0·16	—	—	3·6	41·9	6·3	0·11	0·04	19·5	40·0
Hernia	3·2	—	—	6·9	36·3	2·4	0·16	0·31	—	1·6	40·0	3·0	0·04	—	8·5	37·0
Constipation	2·4	—	—	1·4	9·4	26·0	—	—	—	3·5	7·7	7·7	—	—	4·9	8·1
Colic	1·4	—	—	0·7	8·3	4·4	—	—	—	0·9	11·3	2·0	—	—	1·5	9·8
Hæmorrhoids	2·2	—	—	2·8	20·7	3·3	—	—	—	0·8	14·3	2·5	—	—	3·6	18·8
Jaundice	1·8	—	—	2·6	23·6	10·6	—	—	—	3·2	17·2	3·8	—	—	5·8	19·6
Other diseases of digestive system	3·3	0·05	0·09	5·0	25·3	4·4	0·16	0·16	—	2·3	29·9	3·5	0·07	0·07	7·3	26·6
TOTAL — DISEASES OF DIGESTIVE SYSTEM	28·2	0·14	0·18	42·0	24·8	65·4	0·47	0·47	—	18·2	15·9	36·6	0·21	0·14	60·2	21·2
Diseases due to disorders of nutrition or metabolism	0·1	—	0·05	0·1	12·5	—	—	—	—	—	—	0·1	—	0·04	0·1	12·5
Diseases of Generative System.																
Phimosis	1·7	—	—	2·0	19·6	2·5	—	—	—	1·0	23·8	1·9	—	—	3·0	20·9
Varicocele	1·2	—	—	2·2	30·4	0·8	—	—	—	0·4	33·0	1·1	—	—	2·6	30·8
Other diseases of generative system	3·2	—	0·05	2·9	15·3	7·2	—	—	—	2·1	17·0	4·1	—	0·04	5·1	16·0
TOTAL — DISEASES OF GENERATIVE SYSTEM	6·1	—	0·05	7·2	19·5	10·5	—	—	—	3·6	19·8	7·0	—	0·04	10·8	19·6

N.B.—For "United Kingdom," the ratio 0·05 = one case of sickness; for "Abroad," the ratio 0·16 = one case of sickness; for "Total Force," the ratio 0·04 = one case of sickness.

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TABLE VII.—NOSOLOGICAL TABLE FOR THE UNITED KINGDOM, ABROAD, AND THE TOTAL FORCE, 1921—*cont.*

Disease.	United Kingdom. Average Strength, 21,936.					Abroad. Average Strength, 6,386.						Total Force. Average Strength, 28,322.				
	Ratios per 1,000 of Average Strength.			Averages.		Ratios per 1,000 of Average Strength.				Averages.		Ratios per 1,000 of Average Strength.			Averages.	
	Cases.	Deaths.	Finally Invalided.	No. Sick Daily.	Duration of Case.	Cases.	Deaths.	Invalided to United Kingdom.	Finally Invalided.	No. Sick Daily.	Duration of Case.	Cases.	Deaths.	Finally Invalided.	No. Sick Daily.	Duration of Case.
Diseases of Organs of Locomotion.				No.	Days.					No.	Days.				No.	Days.
Diseases of the bone	0·4	—	0·23	1·5	67·1	0·2	—	0·47	0·16	0·5	175·0	0·3	—	0·21	2·0	79·1
Diseases of the joints	4·2	—	0·18	6·3	24·7	3·6	—	0·31	0·31	1·0	15·7	4·1	—	0·21	7·3	22·9
Myalgia and lumbago	4·2	—	0·05	2·2	8·5	8·1	—	—	—	1·2	8·2	5·1	—	0·04	3·3	8·4
Diseases of muscles, tendons and bursæ	1·0	—	—	1·2	19·8	2·0	—	0·31	—	1·3	35·5	1·2	—	—	2·5	25·6
Deformities of limbs	1·7	—	0·32	3·5	33·9	0·8	—	0·63	0·16	1·4	104·2	1·5	—	0·28	4·9	42·1
TOTAL — DISEASES OF THE ORGANS OF LOCOMOTION	11·6	—	0·78	14·7	21·1	14·7	—	1·72	0·63	5·3	20·7	12·3	—	0·74	20·0	21·0
Diseases of areolar tissue and skin	15·2	—	0·18	18·2	19·9	14·2	—	0·31	0·16	4·7	18·9	15·0	—	0·18	22·9	19·7

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Diseases of Urinary Organs.																
Nephritis	0·1	—	0·05	0·3	48·5	0·8	0·16	—	0·16	0·5	35·2	0·2	0·04	0·07	0·8	39·0
Incontinence of urine	1·0	—	0·27	1·0	15·7	0·2	—	0·16	0·16	0·2	67·0	0·8	—	0·25	1·2	17·9
Other diseases of urinary organs	1·7	—	0·09	4·7	44·9	2·4	—	0·47	—	1·9	45·9	1·9	—	0·07	6·6	45·2
TOTAL — DISEASES OF URINARY ORGANS	2·9	—	0·41	5·9	34·4	3·3	0·16	0·63	0·31	2·6	44·4	3·0	0·04	0·39	8·5	36·9
Tumours and Cysts.																
Tumours, non-malignant	0·8	—	—	1·0	19·9	1·7	—	—	—	0·6	21·2	1·0	—	—	1·6	20·4
Tumours, malignant	—	0·05	—	0·1	42·0	—	—	—	—	—	—	—	0·04	—	0·1	42·0
Cysts	1·1	—	—	1·1	17·3	0·6	—	—	—	0·2	15·0	1·0	—	—	1·3	17·0
TOTAL — TUMOURS AND CYSTS	1·9	0·05	—	2·2	19·4	2·4	—	—	—	0·8	19·5	2·0	0·04	—	3·0	19·5
Poisons.																
Effects of alcohol	0·1	—	—	0·1	12·5	0·2	0·16	—	—	0·0	3·0	0·1	0·04	—	0·1	9·3
Other poisons	0·3	—	—	0·1	5·3	0·9	—	—	—	0·3	15·7	0·4	—	—	0·4	10·5
TOTAL — POISONS	0·4	—	—	0·2	7·1	1·1	0·16	—	—	0·3	13·9	0·5	0·04	—	0·4	10·3
Morbid conditions due to flying	0·1	—	—	0·1	10·3	—	—	—	—	—	—	0·1	—	—	0·1	10·3

N.B.—For "United Kingdom," the ratio 0·05 = one case of sickness; for "Abroad," the ratio 0·16 = one case of sickness; for "Total Force," the ratio 0·04 = one case of sickness.

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TABLE VII.—NOSOLOGICAL TABLE FOR THE UNITED KINGDOM, ABROAD, AND THE TOTAL FORCE, 1921—*cont.*

Disease.	United Kingdom. Average Strength, 21,936.					Abroad. Average Strength, 6,386.						Total Force. Average Strength, 28,322.				
	Ratios per 1,000 of Average Strength.			Averages.		Ratios per 1,000 of Average Strength.				Averages.		Ratios per 1,000 of Average Strength.			Averages.	
	Cases.	Deaths.	Finally Invalided.	No. Sick Daily.	Duration of Case.	Cases.	Deaths.	Invalided to United Kingdom.	Finally Invalided.	No. Sick Daily.	Duration of Case.	Cases.	Deaths.	Finally Invalided.	No. Sick Daily.	Duration of Case.
				No.	Days.					No.	Days.				No.	Days.
No appreciable disease	3·7	—	—	2·0	9·2	3·8	—	—	—	0·5	7·8	3·7	—	—	2·6	8·9
Debility	1·6	—	—	1·2	12·1	13·9	—	1·57	—	4	18·0	4·4	—	—	5·6	16·3
*TOTAL — ALL DISEASES	322·8	1·00	9·44	381·1	19·6	796·2	2·98	24·74	5·64	267·7	19·2	429·4	1·45	8·58	648·8	19·5
***General Injuries.**																
Burns and scalds	0·4	0·09	—	0·5	21·8	2·5	1·10	—	—	0·8	19·3	0·8	0·32	—	1·3	20·1
Heatstroke and sunstroke	0·2	—	—	0·1	8·0	12·8	0·94	0·16	—	2·1	9·5	3·1	0·21	—	2·3	9·4
Suffocation and strangulation	0·1	0·05	—	—	—	0·2	0·16	—	—	—	—	0·1	0·07	—	—	—
Drowning	0·4	0·36	—	—	—	0·2	0·16	—	—	—	—	0·3	0·32	—	—	—
Multiple minor injuries	1·9	—	—	1·1	10·1	2·8	—	0·16	—	0·8	15·9	2·1	—	—	1·9	11·8
Multiple fractures	1·2	1·00	0·05	2·5	34·4	1·7	1·72	—	—	—	—	1·3	1·17	0·04	2·5	24·1

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Gunshot wounds -	0·1	0·05	—	—	—	0·3	—	—	—	0·0	5·0	0·1	0·04	—	0·0	3·3
Multiple wounds -	0·1	—	—	0·6	107·5	0·3	—	0·16	0·16	0·7	132·0	0·1	—	0·04	1·3	119·8
Others - - -	1·4	1·09	0·05	0·1	1·2	—	—	—	—	—	—	1·1	0·85	0·04	0·1	1·2
TOTAL—GENERAL INJURIES -	5·6	2·64	0·09	4·9	14·6	20·8	4·07	0·47	0·16	4·5	12·4	9·0	2·97	0·11	9·4	13·5
Local Injuries.																
(i) *Head and Neck.*																
Contusions and wounds - -	3·4	—	—	2·3	11·1	4·1	—	—	—	0·9	12·4	3·5	—	—	3·1	11·5
Gunshot wounds -	0·1	0·05	—	0·2	41·5	0·2	0·16	—	—	0·0	0·0	0·1	0·07	—	0·2	27·7
Burns and scalds -	0·4	—	—	0·2	10·9	0·3	—	—	—	0·1	9·0	0·4	—	—	0·3	10·5
Fracture of skull -	0·8	0·14	—	2·1	44·5	0·3	0·16	—	—	0·1	27·5	0·7	0·14	—	2·2	42·7
Concussion of brain	2·4	—	—	2·6	18·0	1·6	—	0·31	—	1·5	54·6	2·2	—	—	4·1	23·8
Other fractures -	0·7	—	0·05	1·1	26·4	0·9	—	—	—	0·3	16·8	0·7	—	0·04	1·4	23·7
Other injuries -	1·2	—	0·05	1·0	13·4	1·7	—	—	—	0·3	8·6	1·3	—	0·04	1·3	12·1
TOTAL—*Head and Neck* -	8·9	0·18	0·09	9·5	17·7	9·1	0·31	0·31	—	3·1	19·6	9·0	0·21	0·07	12·6	18·1
(ii) *Trunk.*																
Contusions and wounds - -	1·9	—	—	1·4	12·4	3·0	—	—	—	0·6	11·5	2·2	—	—	2·0	12·1
Gunshot wounds -	0·1	0·05	—	0·7	84·7	0·3	0·16	—	—	0·4	75·5	0·2	0·07	—	1·1	81·0
Burns - - -	—	—	—	—	—	0·2	—	—	—	0·0	5·0	0·0	—	—	0·0	5·0
Fractures - -	0·5	0·05	—	0·4	15·8	—	—	—	—	—	—	0·4	0·04	—	0·4	15·8
Other injuries -	0·6	—	—	0·7	18·4	0·5	—	—	—	0·0	4·7	0·6	—	—	0·7	15·9
TOTAL—*Trunk*	3·1	0·09	—	3·3	17·2	3·9	0·16	—	—	1·1	15·6	3·3	0·11	—	4·3	16·8

N.B.—For "United Kingdom," the ratio 0·05 = one case of sickness; for "Abroad," the ratio 0·16 = one case of sickness; for "Total Force," the ratio 0·04 = one case of sickness.

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TABLE VII.—NOSOLOGICAL TABLE FOR THE UNITED KINGDOM, ABROAD, AND THE TOTAL FORCE, 1921—*cont.*

Disease.	United Kingdom. Average Strength, 21,936.					Abroad. Average Strength, 6,386.						Total Force, Average Strength, 28,322.				
	Ratios per 1,000 of Average Strength.			Averages.		Ratios per 1,000 of Average Strength.				Averages.		Ratios per 1,000 of Average Strength.			Averages.	
	Cases.	Deaths.	Finally Invalided.	No. Sick Daily.	Duration of Case.	Cases.	Deaths.	Invalided to United Kingdom.	Finally Invalided.	No. Sick Daily.	Duration of Case.	Cases.	Deaths.	Finally Invalided.	No. Sick Daily.	Duration of Case.
LOCAL INJURIES—*cont.*				No.	Days.					No.	Days.				No.	Days.
(iii) *Upper Extremity.*																
Contusions and wounds	5·9	—	0·05	5·8	16·4	6·0	—	—	0·16	1·6	15·1	5·9	—	0·07	7·4	16·1
Gunshot wounds	0·3	—	—	0·6	37·8	0·3	—	0·16	0·16	0·3	61·5	0·3	—	0·04	0·9	43·8
Burns and scalds	0·5	—	—	0·4	14·7	0·6	—	—	—	0·1	9·5	0·5	—	—	0·5	13·2
Fractures	5·2	—	0·09	11·7	38·0	7·4	—	0·16	—	5·2	40·0	5·6	—	0·07	16·9	38·6
Dislocations	0·9	—	—	1·4	25·7	0·9	—	0·16	—	0·5	33·3	0·9	—	—	1·9	27·4
Sprains	0·8	—	—	0·5	10·9	2·7	—	—	—	0·7	14·9	1·2	—	—	1·2	12·9
Other injuries	0·2	—	—	0·2	17·2	0·3	—	—	—	0·2	36·0	0·2	—	—	0·4	22·6
(iv) TOTAL—*Upper Extremity*	13·8	—	0·14	20·8	25·1	18·2	—	0·47	0·31	8·6	27·1	14·8	—	0·18	29·4	25·7
(v) TOTAL—*Hand and Wrist*	6·8	—	—	8·2	20·1	9·9	—	—	0·16	3·5	20·2	7·4	—	0·04	11·6	20·1
(vi) TOTAL — *Rest of Limb*	7·0	—	0·14	12·6	29·9	8·3	—	0·47	0·16	5·1	35·3	7·3	—	0·14	17·7	31·3

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(vii) *Lower Extremity.*																
Contusions and wounds - -	9·8	—	0·05	7·2	12·2	16·1	—	—	—	4·4	15·4	11·2	—	0·04	11·5	13·3
Gunshot wounds -	0·1	—	—	0·0	11·0	0·6	—	0·16	0·16	0·8	70·0	0·2	—	0·04	0·8	58·2
Burns and scalds -	0·3	—	—	0·4	22·5	0·6	—	—	—	0·2	15·5	0·4	—	—	0·5	19·7
Fractures - -	2·8	—	0·09	13·9	83·4	1·1	—	0·63	—	1·4	72·6	2·4	—	0·07	15·3	82·3
Dislocations - -	0·2	—	—	0·5	43·3	—	—	—	—	—	—	0·1	—	—	0·5	43·3
Sprains - - -	8·8	—	—	8·6	16·3	11·4	—	—	—	2·3	11·4	9·4	—	—	10·9	15·0
Other injuries -	7·8	—	0·05	6·5	13·9	9·6	—	—	—	4·8	28·8	8·2	—	0·04	11·3	17·8
(viii) TOTAL— *Lower Extremity*	29·6	—	0·18	37·1	20·9	39·4	—	0·78	0·16	13·8	20·0	31·8	—	0·18	50·9	20·6
(ix) TOTAL — *Foot and Ankle* -	12·4	—	—	11·2	15·0	19·0	—	—	—	4·4	13·4	13·8	—	—	15·6	14·5
(x) TOTAL — *Knee* - - -	9·5	—	0·05	9·6	16·8	10·2	—	—	—	3·2	18·0	9·7	—	0·04	12·8	17·1
(xi) TOTAL — *Rest of Limb* -	7·8	—	0·14	16·4	35·1	10·3	—	0·78	0·16	6·1	34·0	8·3	—	0·14	22·5	34·8
*TOTAL — ALL LOCAL INJURIES	55·5	0·27	0·41	70·7	21·2	70·6	0·47	1·57	0·47	26·6	21·5	58·9	0·32	0·43	97·2	21·3
*TOTAL — ALL INJURIES - -	61·1	2·92	0·50	75·6	20·6	91·4	4·54	2·04	0·63	31·1	19·4	67·9	3·28	0·53	106·7	20·2
*TOTAL — ALL DISEASES -	322·8	1·00	9·44	381·1	19·6	796·2	2·98	24·74	5·64	267·7	19·2	429·4	1·45	8·58	648·8	19·5
*TOTAL — ALL DISABILITIES -	383·8	3·92	9·94	456·7	19·8	887·6	7·52	26·76	6·26	298·8	19·2	497·3	4·7	9·11	755·4	19·6

N.B.—For "United Kingdom," the ratio 0·05 = one case of sickness; for "Abroad," the ratio 0·16 = one case of sickness; for "Total Force," the ratio 0·04 = one case of sickness.

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TABLE VIII.—NOSOLOGICAL TABLE BY GEOGRAPHICAL AREAS

Disease.	United Kingdom. Average strength, 21,936. Ratios per 1,000 of average strength. Cases.	Deaths.	Finally Invalided.	Averages. No. Sick daily.	Duration of Case.	Mediterranean. Littoral. Average strength, 3,306. Ratios per 1,000 of average strength. Cases.	Deaths.	Invalided to United Kingdom.	Finally Invalided.	Averages. No. Sick daily.	Duration of Case.
Communicable Diseases.											
Dysentery—					Days.						Days.
Clinical, primary	—	—	—	—	—	8·2	—	—	—	2·1	27·8
„ recurrent	0·1	—	—	0·1	10·0	1·5	—	—	—	0·3	24·4
Bacillary, primary	—	—	—	—	—	4·2	0·30	—	—	1·6	41·6
„ recurrent	—	—	—	—	—	0·3	—	—	—	0·2	81·0
Amœbic, primary	—	—	0·05	0·5	—	2·4	—	0·30	—	1·2	54·9
„ recurrent	0·9	—	—	2·3	42·1	0·9	—	—	—	0·3	35·3
TOTAL—Dysentery	1·0	—	0·05	2·8	43·8	17·5	0·30	0·30	—	5·7	35·9
Enteric fever	0·1	—	—	0·4	69·0	1·2	—	—	—	1·1	102·3
Paratyphoid	—	—	—	0·0	0·0	1·5	—	—	—	0·9	63·4
Enteritis	4·4	—	—	1·7	6·6	36·9	—	—	—	2·6	7·8
Influenza	26·4	0·05	—	13·5	8·5	12·1	0·30	—	—	0·8	7·3
Malaria—											
Clinical, primary	—	—	—	—	—	0·6	—	—	—	0·2	37·5
„ recurrent	1·7	—	—	1·5	15·6	8·8	—	0·30	—	1·1	13·3
Benign tertiary, primary	0·1	—	—	0·1	11·5	4·2	—	—	—	0·8	21·6
„ „ recurrent	1·3	—	—	2·0	25·6	7·3	—	0·30	—	1·6	23·8
Quartan, primary and recurrent	0·1	—	—	—	5·0	—	—	—	—	—	—
Malignant tertian, primary	—	—	—	—	—	0·9	—	0·30	—	0·5	60·7
„ „ recurrent	0·5	—	—	0·7	26·5	1·2	—	0·30	—	0·2	22·3
Unspecified	—	—	—	—	—	—	—	—	—	—	—
Cachexia	0·1	—	—	0·2	44·5	0·3	—	—	—	—	3·0
TOTAL—Malaria	3·7	—	—	4·6	20·9	23·3	—	1·21	—	4·4	20·9
Pyrexia of unknown origin	4·3	—	—	1·8	6·9	17·5	—	—	—	2·7	17·0
Sandfly fever	—	—	—	—	—	55·7	—	—	—	3·4	6·7
Scabies	14·3	—	—	8·9	10·3	6·1	—	—	—	0·6	10·3
Tuberculosis	1·6	0·05	1·60	8·8	94·4	2·1	0·60	2·12	0·91	3·0	154·6
Upper air passage infections	55·8	—	—	28·1	8·4	110·4	—	—	—	7·5	7·5
Venereal disease, primary	20·2	—	—	64·4	53·0	31·8	—	—	—	25·3	87·9
„ „ other	12·1	—	0·05	29·7	41·0	23·6	—	0·30	0·30	8·6	40·4
TOTAL—Venereal disease	32·3	—	0·05	94·2	48·5	55·4	—	0·30	0·30	33·9	67·7
Other communicable diseases	29·5	0·23	0·23	39·1	22·1	20·6	0·30	0·60	—	4·1	21·7
Other diseases	149·3	0·68	7·52	177·3	19·8	202·4	0·30	11·19	3·63	40·5	22·1
All diseases	322·8	1·00	9·44	381·2	19·7	562·8	1·81	15·73	4·84	111·0	21·8
General injuries	5·6	2·64	0·09	4·9	14·6	16·3	4·54	0·30	—	1·1	7·4
Local injuries	55·5	0·27	0·41	70·7	21·2	56·3	0·30	1·81	0·60	13·3	26·1
All injuries	61·1	2·92	0·50	75·6	20·6	72·6	4·84	2·12	0·60	14·4	21·9
TOTAL—All disabilities	383·8	3·92	9·94	456·7	19·8	635·5	6·65	17·85	5·44	125·4	21·8

For "United Kingdom" one case of sickness = 0·05, for Mediterranean 0·30

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FOR DISEASES STARRED (*) ON TABLE VII.

Iraq. Average strength, 1,282.						India. Average strength, 1,798.						Total. Average strength, 28,322.					
Ratios per 1,000 of average strength.				Averages.		Ratios per 1,000 of average strength.				Averages.		Ratios per 1,000 of average strength.				Averages.	
Cases.	Deaths.	Invalided to United Kingdom.	Finally Invalided.	No. Sick Daily.	Duration of Case.	Cases.	Deaths.	Invalided to United Kingdom.	Finally Invalided.	No. Sick daily.	Duration of Case.	Cases.	Deaths.	Invalided to United Kingdom.	Finally Invalided.	No. Sick daily.	Duration of Case.
					Days.						Days.						Days.
10·9	—	—	—	0·4	10·5	8·3	—	—	—	1·0	23·8	2·0	—	—	—	3·4	22·4
4·7	—	—	—	0·2	12·8	8·9	—	—	—	0·9	21·4	1·0	—	—	—	1·5	19·4
3·9	—	—	—	0·5	36·0	—	—	—	—	—	—	0·7	0·04	—	—	2·1	40·1
—	—	—	—	—	—	—	—	—	—	—	—	0·0	—	—	—	0·2	81·0
46·0	—	2·34	—	6·6	40·5	16·7	—	1·11	—	2·7	33·3	3·4	—	—	0·04	11·0	41·2
13·3	—	2·34	—	2·0	43·6	14·5	—	1·67	—	2·5	35·0	2·3	—	—	—	7·1	39·4
78·8	—	4·68	—	9·7	35·0	48·4	—	2·78	—	7·2	30·0	9·5	0·04	—	0·04	25·4	34·5
3·9	—	1·56	—	1·8	134·2	3·3	1·11	—	—	1·3	80·3	0·6	0·07	—	—	4·7	100·0
7·8	—	—	—	1·6	57·1	0·6	—	—	—	0·3	104·0	0·6	—	—	—	2·7	62·4
94·4	—	—	—	2·9	8·7	76·2	—	—	—	3·5	9·3	16·8	—	—	—	10·7	8·2
10·9	—	—	—	0·2	6·0	2·8	—	—	—	0·2	14·4	22·6	0·07	—	—	14·7	8·4
6·2	—	—	—	0·3	11·8	46·7	—	—	—	2·4	10·3	3·4	—	—	—	2·9	11·0
8·6	—	—	—	0·5	15·3	48·4	—	—	—	2·3	9·7	5·8	—	—	—	5·4	12·0
5·5	—	0·78	—	0·6	32·0	105·1	—	—	—	5·8	11·3	7·5	—	—	—	7·3	12·6
54·6	—	3·12	—	3·7	19·3	92·9	—	0·56	—	5·4	11·8	10·2	—	—	—	12·7	16·0
—	—	—	—	—	—	—	—	—	—	—	—	0·0	—	—	—	0·0	5·0
—	—	—	—	—	—	22·3	—	—	—	1·2	10·8	1·5	—	—	—	1·7	14·3
3·1	—	—	—	0·1	12·5	17·8	—	—	—	1·0	11·6	1·8	—	—	—	2·1	15·6
—	—	—	—	—	—	2·2	0·56	—	—	0·1	10·3	0·1	0·04	—	—	0·1	10·3
0·8	—	0·78	—	—	8·2	2·2	—	—	—	0·1	6·3	0·3	—	—	—	0·3	14·6
78·8	—	4·68	—	5·2	18·7	337·6	0·56	0·56	—	18·3	11·0	30·6	0·04	—	—	32·5	13·7
10·1	—	—	—	0·6	17·7	9·5	—	—	—	0·4	8·1	6·5	—	—	—	5·5	11·0
235·6	—	—	—	7·6	9·2	164·6	—	—	—	6·1	7·6	27·7	—	—	—	17·2	8·0
2·3	—	—	—	0·1	16·7	2·2	—	—	—	0·1	10·0	12·0	—	—	—	9·7	10·4
1·6	—	1·56	0·78	1·7	301·0	2·8	0·56	1·11	0·56	1·0	74·4	1·7	0·14	—	1·41	14·5	109·7
89·7	—	—	—	2·5	8·1	61·2	—	—	—	3·1	10·3	64·1	—	—	—	41·2	8·3
13·3	—	—	—	1·9	41·1	37·3	—	—	—	9·9	54·6	22·4	—	—	—	101·5	58·5
12·5	—	—	—	1·3	30·4	17·2	—	—	—	5·2	60·9	13·8	—	—	0·07	44·8	42·0
25·7	—	—	—	3·2	35·9	54·5	—	—	—	15·0	56·0	36·1	—	—	0·07	146·4	52·2
16·4	—	0·78	—	1·9	32·4	23·4	0·56	0·56	0·56	3·0	15·8	27·5	0·25	—	0·21	48·0	22·5
293·3	3·12	22·62	5·46	23·0	22·3	328·9	2·22	28·36	5·56	35·2	21·8	173·3	0·85	—	6·85	275·9	20·5
950·1	3·12	35·88	6·24	62·1	18·6	1115·9	5·01	33·37	6·67	94·7	17·2	420·4	1·45	—	8·58	648·9	19·5
39·0	5·46	1·56	0·78	2·5	18·0	15·6	2·22	—	—	1·0	12·3	9·0	2·97	—	0·11	9·4	13·5
113·1	0·78	1·56		7·1	17·9	66·7	0·56	1·11	0·56	6·2	18·8	58·9	0·32	—	0·43	97·2	21·3
152·1	6·24	3·12	0·78	9·6	17·9	82·3	2·78	1·11	0·56	7·2	17·6	67·9	3·28	—	0·53	106·7	20·2
1102·2	9·40	39·00	7·02	71·5	18·6	1198·2	7·79	34·5	7·20	101·8	17·2	497·3	4·73	—	9·11	755·4	19·6

for Iraq 0·78, for India 0·56, and for total force 0·04.

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Table IX.—Comparative Case Rates of Disease and Injury shown in Table X.

Type of Unit.	At Home.			Abroad.			Total Force.		
	Disease. 1.	Injury. 2.	No. of Cases of Injury per 100 Total Cases. 3.	Disease. 4.	Injury. 5.	No. of Cases of Injury per 100 Total Cases. 6.	Disease. 7.	Injury. 8.	No. of Cases of Injury per 100 Total Cases. 9.
Airship Stations	103	142	21	—	—	—	78	128	21
Depôts									
Personnel	87	53	10	—	—	—	66	47	10
Repair	108	126	18	133	78	6	148	110	11
Store	56	47	14	89	109	12	112	102	13
Experimental units	90	147	24	—	—	—	68	132	24
Headquarters, Records and Pay Offices and other small units	80	80	16	65	70	11	73	76	14
Flying schools	101	136	20	76	88	12	80	121	19
Ground schools	121	79	11	—	—	—	91	71	11
Squadrons, Independent flights and ships	92	124	20	96	115	11	130	136	14
Total	100	100	16	100	100	10	100	100	14
Actual Case incidence rates per 1,000 of strength for total force	322·8	61·1	—	796·2	91·4	—	429·4	67·9	—

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TABLE X.

Diseases and Injury Ratios amongst different Types of Units.

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TABLE X.—DISEASE AND INJURY RATIOS AMONGST DIFFERENT TYPES OF UNITS.

Type of Unit.	HOME.							OVERSEAS.						TOTAL.					
	Average Strength.	—	Ratios per 1,000 of Average Strength.				Average Duration per Case.	Average Strength.	Ratios per 1,000 of Average Strength.				Average Duration per Case.	Average Strength.	Ratios per 1,000 of Average Strength.				Average Duration per Case.
			Cases.	Deaths.	Invalided out of Service.	No. Sick daily.			Cases.	Deaths.	Invalided out of Service.	No. Sick daily.			Cases.	Deaths.	Invalided out of Service.	No. Sick daily.	
							Days.						Days.						Days.
Airship Stations - -	542	Disease -	333·9	1·8	29·5	24·5	26·8	—	—	—	—	—	—	542	333·9	1·8	29·5	24·5	26·8
		Injury -	86·7	42·4	—	2·8	11·8								86·7	42·4	—	2·8	11·8
		Total -	420·6	44·2	29·5	27·3	23·7		—	—	—	—	—		420·6	44·2	29·5	27·3	23·7
Depôts (Personnel) -	2,920	Disease -	281·5	1·7	13·4	17·1	22·3	—	—	—	—	—	—	2,920	281·5	1·7	13·4	17·1	22·3
		Injury -	32·2	—	—	1·4	15·8								32·2	—	—	1·4	15·8
		Total -	313·7	1·7	13·4	18·5	21·6		—	—	—	—	—		313·7	1·7	13·4	18·5	21·6
Depôts (Repair) - -	2,177	Disease -	347·3	1·8	6·4	16·0	16·8	1,491	1061·0	2·7	4·8	53·7	18·5	3,668	637·4	2·2	5·7	31·3	17·9
		Injury -	77·2	2·3	0·5	3·3	15·5		71·8	0·7	—	3·4	17·2		75·0	1·6	0·3	3·3	16·1
		Total -	424·5	4·1	6·9	19·3	16·6		1132·8	3·4	4·8	57·1	18·4		712·4	3·8	6·0	34·6	17·8
Depôts (Store) - -	348	Disease -	181·0	—	11·5	10·1	20·1	460	708·7	4·4	2·2	31·5	16·3	808	481·4	2·5	6·2	22·3	16·9
		Injury -	28·7	2·9	—	0·9	12·0		100·0	2·2	—	4·3	15·8		69·3	2·5	—	2·8	15·1
		Total -	209·8	2·9	11·5	10·9	19·2		808·7	6·6	2·2	35·9	16·2		550·7	5·0	6·2	25·2	16·7

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Experimental and Design Establishments.	1,038	Disease -	292·1	0·9	5·7	17·6	22·0	—	—	—	—	—	—	1,038	292·1	0·9	5·7	17·6	22·0
		Injury -	89·8	5·7	0·9	5·1	20·7		—	—	—	—	—		89·8	5·7	0·9	5·1	20·7
		Total -	381·9	6·6	6·6	22·7	21·7		—	—	—	—	—		381·9	6·6	6·6	22·7	21·7
Headquarters, Medical, and other small units, Records and Pay Offices.	2,758	Disease -	257·4	0·4	5·8	13·8	19·6	735	518·4	2·7	6·8	38·8	27·3	3,493	312·3	0·9	6·0	19·1	22·3
		Injury -	48·6	1·5	0·7	3·0	23·1		63·9	2·7	—	5·6	32·2		51·8	1·7	0·6	3·6	25·4
		Total -	306·0	1·8	6·5	16·9	20·2		582·3	5·4	6·8	44·4	27·8		364·2	2·6	6·6	22·6	22·7
Schools, flying (including Cadet College).	3,824	Disease -	325·3	0·8	10·7	18·4	20·7	236	605·9	4·2	—	24·1	14·7	4,060	341·6	0·9	10·1	18·8	20·0
		Injury -	82·8	2·6	0·8	5·3	23·3		80·5	—	—	4·2	20·0		82·5	2·5	0·7	5·2	23·1
		Total -	407·9	3·4	11·6	23·7	21·2		686·4	4·2	—	28·4	15·3		424·1	3·4	10·8	24·0	20·6
Schools, ground - -	5,572	Disease -	390·7	0·7	9·5	18·1	16·9	—	—	—	—	—	—	5,572	390·7	0·7	9·5	18·1	16·9
		Injury -	48·1	0·4	0·4	2·7	20·6		—	—	—	—	—		48·1	0·4	0·4	2·7	20·6
		Total -	438·8	1·1	9·9	20·8	17·3		—	—	—	—	—		438·8	1·1	9·9	20·8	17·3
Squadrons and Ships -	2,737	Disease -	298·5	1·1	6·6	18·7	22·8	3,464	765·6	2·9	6·6	40·1	19·1	6,201	559·4	2·1	6·6	30·6	20·0
		Injury -	76·0	4·7	0·7	4·9	23·6		105·4	7·2	1·2	5·5	18·9		92·4	6·1	1·0	5·2	20·6
		Total -	374·5	5·8	7·3	23·6	23·0		871·0	10·1	7·8	45·5	19·0		652·0	8·2	7·6	35·8	20·1
TOTAL - - -	21,936	Disease -	322·8	1·0	9·4	17·4	19·7	6,386	795·8	3·0	5·6	41·9	19·2	28,322	429·4	1·4	8·6	22·9	19·5
		Injury -	61·1	2·9	0·5	3·4	20·6		91·5	4·5	0·6	4·9	19·4		67·9	3·3	0·5	3·8	20·2
		Total -	383·9	3·9	9·9	20·8	19·8		887·2	7·5	6·2	46·8	19·2		497·4	4·7	9·1	26·7	19·6

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CHAPTER II.

THE HEALTH OF THE ROYAL AIR FORCE IN THE UNITED KINGDOM DURING 1921.

Section I.—General.

1. As already explained in Chapter I., two small units serving in Europe are included in the United Kingdom figures. Details of sickness are shown in Table I., page 3. Compared with 1920 a considerable reduction has occurred in the "case incidence," "duration of case," "average number of days sickness per individual," "number sick daily," and "number invalided out of the service." The sole increase is in the death rate. This was due to the death roll in the R.38 disaster; deducting these deaths, the death rate per 1,000 of strength was 2·9. Monthly case incidence sickness ratios per 1,000 of strength are shown for 1920 and 1921 in Chart I., page 2.

2. In addition to the 218 invalids who were discharged from the service through navy, army or air force hospitals on the termination of sickness, a further 712 airmen were invalided from the service on the findings of the R.A.F. discharge centre medical board at Uxbridge. Details of the causes of discharge of this group are given in Table XII., page 37. These cases are not included in the nosological tables in Chapter I., pages 14 and 28.

3. Table XI., page 36, shows details of sickness both in sick quarters and hospitals for the principal air stations in the United Kingdom during 1921 and 1920. For a few stations the corresponding figures for 1920 are not available, mainly owing to the average strength of the station during 1920 being so small as to render the figures valueless for comparison. The high death rate at Howden (47·9) was due to the disaster to the R.38.

Section II.—Diseases calling for Special Mention.

1. The case incidence, per 1,000 of strength, of scabies has been reduced from 32·2 in 1920 to 14·3 in 1921, the average duration of each case falling from 12·3 to 10·3 days during the same period. Although the reduction in the case incidence is satisfactory, the duration of treatment is still too long. Impetigo contagiosa also shows a marked reduction in case incidence from 27·2 in 1920 to 14·5 in 1921. Venereal disease and upper air

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passage infections have already been discussed in Chapter I. The case incidence, per 1,000 of strength, of influenza increased from 12·7 in 1920 to 26·4 in 1921. The increase was chiefly due to the number of mild cases which occurred at Halton and Cranwell during January and February, and again in December, at the latter station, chiefly amongst boys. Frequent throat swabs during the periods of outbreak gave a high percentage of *bacillus influenzæ*. The mild type of disease is shown by the reduction of the average duration from 19·8 days in 1920 to 8·5 in 1921. The single death reported was due to influenzal pneumonia. Sixty cases of scarlet fever were reported during the year, two-thirds of these occurring at Cranwell in an epidemic during the last three months of the year. The disease was of a mild type and there were no deaths. Nineteen cases of diphtheria occurred during the year, five at Harlescott in June, three at Halton, two at Leuchars in May, and two at Uxbridge in December. The outbreak at Harlescott was traced to a carrier who had had diphtheria the previous summer at Halton. There were two outbreaks of mumps, one at Cranwell from February to July (26 cases) and the other at Flowerdown in February and March (10 cases). The remainder (15 cases) were sporadic. Two cases each, of cerebro-spinal meningitis and encephalitis lethargica, occurred at Cranwell in February. The organisms isolated in the former were Type I. meningococcus. Fifty-two contacts were swabbed, three of whom were positive to Type I. There was one death. The two cases of encephalitis lethargica occurred about a fortnight later, and both recovered. Thirty-nine contacts were swabbed and all proved negative. There were two cases of typhoid fever, in neither of which could the source of infection be traced. No cases of paratyphoid occurred. Eighty-one admissions for malaria were reported at home, representing a case incidence ratio per 1,000 of 3·7, as compared with 4·2 in 1920. Types are shown in Table VIII., page 28. The only primary cases, two in number, were of the benign tertian type, and occurred at the Isle of Grain in September. Malaria is indigenous in this district, and these two cases were probably infected through the agency of the civil population.

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TABLE XI.—SICKNESS AT PRINCIPAL STATIONS AT HOME, 1921 AND 1920.

Station.		Strength.	Average duration of each case.		Average number sick daily.				Ratios per 1,000 of average strength.							
									Cases of sickness.		Deaths.	Average Sick Daily.				
			Sick Quarters.	Total.	In Sick Quarters.	In Hospital.	Total. Including 48-hour cases.	Total. Excluding 48-hour cases.	Including 48-hour cases.	Excluding 48-hour cases.		In Sick Quarters.	In Hospital.	Total. Including 48-hour cases.	Total. Excluding 48-hour cases.
		No.	days	days	No.	No.	No.	No.							
Andover	1921	208	3·5	11·6	1·2	4·0	5·3	5·0	798·1	461·6	4·8	5·8	19·2	25·5	24·0
	1920	*270*	*3·8*	*14·5*	*1·5*	*7·5*	*9·0*	*8·7*	*837·0*	*533·2*	—	*5·7*	*27·5*	*33·2*	*32·2*
Baldonnell	1921	528	2·6	13·9	1·8	13·5	15·2	14·6	755·7	403·4	5·7	3·4	25·6	28·8	27·7
	1920	*500*	*6·3*	*24·7*	*2·8*	*17·7*	*20·5*	*20·3*	*606·0*	*546·0*	*10·0*	*5·6*	*35·4*	*41·0*	*40·6*
Biggin Hill	1921	248	3·6	13·5	1·2	5·6	6·8	6·5	746·0	459·7	4·0	4·8	22·6	27·4	26·2
	1920	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Calshot	1921	469	4·5	12·7	2·4	5·1	7·5	7·0	460·6	232·4	—	5·1	10·9	16·0	14·9
	1920	*364*	*7·0*	*15·6*	*6·1*	*8·7*	*14·8*	*14·3*	*958·8*	*648·4*	—	*16·8*	*23·9*	*40·7*	*39·3*
Cranwell	1921	1973	1·5	9·7	2·3	46·1	48·4	46·1	920·9	637·1	1·5	1·2	23·4	24·5	23·4
	1920	*1335*	—	*12·9*	—	—	*29·5*	*28·5*	*836·8*	*634·5*	*1·5*	—	—	*29·5*	*28·5*
Donibristle	1921	496	4·4	14·0	1·8	5·9	7·8	7·6	407·3	304·4	2·0	3·6	11·9	15·7	15·3
	1920	*547*	*4·2*	*14·2*	*3·1*	*11·2*	*14·3*	*13·8*	*674·6*	*489·9*	*1·8*	*5·7*	*20·4*	*26·1*	*25·2*
Duxford	1921	411	4·4	11·8	4·1	8·2	12·3	11·6	927·2	464·7	7·3	10·0	20·0	29·9	28·2
	1920	*284*	*2·1*	*9·3*	*2·7*	*10·2*	*12·9*	*11·3*	*1781·6*	*369·7*	—	*9·5*	*35·9*	*45·4*	*39·8*
Eastchurch	1921	276	3·0	7·4	1·5	2·4	3·9	3·4	706·5	163·0	—	5·4	8·7	14·1	12·3
	1920	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Farnborough	1921	377	3·4	7·5	4·1	7·3	11·5	9·9	1469·5	583·6	8·0	10·9	19·4	30·5	26·3
	1920	*404*	*4·4*	*12·9*	*2·5*	*9·2*	*11·7*	*11·1*	*816·7*	*502·4*	—	*6·2*	*22·8*	*29·0*	*27·5*
Felixstowe	1921	291	4·6	9·3	2·3	2·5	4·8	4·3	646·0	250·9	3·4	7·9	8·6	16·5	14·8
	1920	*202*	*5·5*	*7·4*	*2·5*	*1·0*	*3·5*	*3·2*	*856·4*	*524·8*	*14·9*	*12·4*	*5·0*	*17·4*	*15·8*
Flowerdown	1921	851	2·9	13·9	3·5	18·3	21·8	20·5	672·2	323·1	1·2	4·1	21·5	25·6	24·1
	1920	*785*	*5·2*	*15·6*	*6·3*	*17·2*	*23·5*	*22·6*	*704·4*	*414·0*	*1·3*	*8·0*	*21·9*	*29·9*	*28·8*
Gosport	1921	408	6·5	13·5	3·7	5·6	9·3	9·1	617·6	477·9	2·5	9·1	13·7	22·8	22·3
	1920	*406*	*4·9*	*13·4*	*4·1*	*10·2*	*14·3*	*13·6*	*963·1*	*539·4*	—	*10·1*	*25·1*	*35·2*	*33·5*
Grain, Isle of	1921	499	3·8	11·5	2·4	6·4	8·8	8·2	561·1	286·6	4·0	4·8	12·8	17·6	16·4
	1920	*345*	*3·5*	*8·3*	*3·6*	*5·4*	*9·0*	*7·5*	*1188·4*	*362·3*	*2·9*	*10·4*	*15·7*	*26·1*	*21·7*
Halton	1921	2952	1·6	13·5	1·7	43·1	44·9	43·1	411·9	275·4	1·0	0·6	14·6	15·2	14·6
	1920	*4316*	—	*16·5*	—	—	*118·8*	*115·7*	*609·1*	*427·9*	*2·6*	—	—	*27·5*	*26·8*
Henlow	1921	1243	4·3	8·9	11·1	14·9	26·0	23·9	858·4	458·6	4·0	8·9	12·0	20·9	19·2
	1920	*1091*	*3·2*	*9·2*	*9·8*	*23·2*	*33·0*	*30·0*	*1205·2*	*534·4*	*0·9*	*9·0*	*21·3*	*30·3*	*27·5*
Howden	1921	501	3·0	10·8	3·3	11·5	14·8	13·7	994·0	425·1	47·9	6·6	23·0	29·5	27·3
	1920	*536*	*3·6*	*13·1*	*2·3*	*8·4*	*10·7*	*10·1*	*557·8*	*246·3*	—	*4·3*	*15·7*	*20·0*	*18·8*
Kenley	1921	318	3·4	11·7	2·0	6·6	8·6	7·8	842·8	295·6	—	6·3	20·8	27·0	24·5
	1920	*377*	*2·8*	*13·1*	*1·3*	*7·4*	*8·7*	*8·2*	*639·3*	*318·3*	*13·3*	*3·5*	*19·6*	*23·1*	*21·8*
Lee-on-Solent	1921	233	3·7	10·4	1·0	2·7	3·7	3·5	557·9	300·4	4·3	4·3	11·6	15·9	15·0
	1920	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Leuchars	1921	324	4·8	12·4	2·1	5·0	7·0	6·6	638·9	354·9	3·1	6·5	15·4	21·6	20·4
	1920	*305*	*6·8*	*13·3*	*2·9*	*3·8*	*6·8*	*6·6*	*609·8*	*426·2*	—	*9·5*	*12·5*	*22·3*	*21·6*
Manston	1921	1558	6·8	12·1	18·7	18·7	37·4	35·6	726·6	437·1	3·9	12·0	12·0	24·0	22·8
	1920	*772*	*5·3*	*12·1*	*8·4*	*15·1*	*23·5*	*22·3*	*920·7*	*466·2*	*3·9*	*10·9*	*19·6*	*30·5*	*28·9*
Netheravon	1921	557	2·8	9·7	2·6	9·6	12·1	11·0	816·9	319·6	—	4·7	17·2	21·7	19·7
	1920	*508*	*3·1*	*13·3*	*3·2*	*17·5*	*20·7*	*19·7*	*1125·7*	*572·7*	*2·0*	*6·3*	*34·4*	*40·7*	*38·8*
Old Sarum	1921	225	3·0	19·3	0·1	3·3	3·4	3·4	284·4	266·7	8·9	0·4	14·7	15·1	15·1
	1920	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Shotwick	1921	353	5·4	11·6	3·0	4·4	7·3	6·9	657·2	337·1	—	8·5	12·5	20·7	19·5
	1920	*326*	*2·4*	*13·9*	*2·3*	*15·2*	*17·5*	*16·1*	*1410·8*	*515·3*	—	*7·1*	*46·6*	*53·7*	*49·4*
Shrewsbury	1921	492	3·5	7·4	4·4	5·4	9·7	8·5	979·7	327·2	6·1	8·9	11·0	19·7	17·3
	1920	*372*	*3·7*	*10·9*	*3·8*	*8·5*	*12·3*	*11·4*	*1112·8*	*483·8*	—	*10·3*	*22·8*	*33·1*	*30·6*
Spittlegate	1921	289	4·3	14·3	1·0	3·0	4·0	3·9	356·4	207·6	—	3·5	10·4	13·8	13·5
	1920	*358*	*5·9*	*19·1*	*2·2*	*6·9*	*9·1*	*8·9*	*488·8*	*346·3*	—	*6·1*	*19·3*	*25·4*	*24·9*
Upavon	1921	303	2·6	30·3	0·2	7·4	7·6	7·5	303·6	227·7	3·3	0·7	24·1	25·1	24·8
	1920	*288*	*2·1*	*16·1*	*0·7*	*8·0*	*8·7*	*8·2*	*691·0*	*376·0*	—	*2·4*	*27·8*	*30·2*	*28·5*
Uxbridge	1921	2926	1·6	4·7	20·0	45·7	65·7	53·5	1763·8	317·5	1·0	6·8	15·6	22·5	18·3
	1920	*1840*	*3·1*	*13·6*	*19·5*	*85·6*	*105·1*	*99·0*	*1541·0*	*621·8*	*2·7*	*10·6*	*46·6*	*57·2*	*53·8*

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TABLE XII.—ROYAL AIR FORCE PERSONNEL INVALIDED OUT OF THE SERVICE BY THE DISCHARGE CENTRE MEDICAL BOARD AT UXBRIDGE DURING 1921.

	Number invalided.	Proportion per 1,000 invalided.
1. Dysentery	7	10
2. Malaria	10	14
3. Tuberculosis	1	1
4. Venereal disease	10	14
5. Neurasthenia and Hysteria	70	99
6. Mental diseases	7	10
7. Defects of vision	56	79
8. Diseases of eye and eyelids	4	6
9. Otitis Media	70	99
10. Other diseases of ear	13	18
11. Diseases of nose and mouth	8	11
12. Valvular disease of heart	23	32
13. Other diseases of heart	67	94
14. Varix	23	32
15. Bronchitis	13	18
16. Other respiratory diseases	4	6
17. Loss or decay of many teeth	19	27
18. Hernia	12	17
19. Hæmorrhoids	2	3
20. Incontinence of urine	13	18
21. Other diseases of urinary organs	3	4
22. Varicocele	6	8
23. Other diseases of generative organs	2	3
24. Diseases of joints	28	39
25. Deformities of feet	86	121
26. Skin diseases	8	11
27. Old gunshot wounds	43	61
28. Malformations resulting from injury apart from gunshot wounds	56	79
29. Impaired constitution and Debility	14	20
30. Epilepsy	10	14
31. Other diseases	23	32
	711	1,000

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CHAPTER III.

THE HEALTH OF THE ROYAL AIR FORCE ABROAD DURING 1921.

Section I.—General.

1. Sickness statistics for India appear in this report for the first time. Table I., page 3, gives details of sickness under geographical areas. Compared with 1920, the average duration of each case, the average number of days sickness per individual, the ratio per 1,000 of strength of the number sick daily, deaths, invalids out of the service and invalids to the United Kingdom, all show considerable reductions. The ratio per 1,000 of strength of fresh cases of sickness, including 48-hour cases, shows an increase on the ratio for 1920. These 48-hour cases, as explained in Chapter I., page 2, have but little effect on the total non-effective rate which will be seen on reference to the last two columns of Table I. Excluding them, the ratio per 1,000 of strength of fresh cases of sickness was reduced from 957·6 in 1920 to 887·6 in 1921. The monthly case incidence of sickness overseas, exclusive of 48-hour cases, is shown in Chart I., page 2. This graph is naturally a composite one. Chart IV., page 38, gives the monthly case incidence of sickness in the three geographical areas abroad in 1921 and for Iraq in 1920. No corresponding figures are available for India in 1920, and the regrouping of Egypt, Palestine and the Mediterranean Group together prevents close comparison between Egypt and Palestine in 1920 and the Mediterranean Littoral in 1921.

2. Table XIX. shows details of sickness in the principal stations abroad in 1921, and also in 1920, where figures are available and the strengths justify insertion.

Section II.—Diseases calling for Special Mention.

1. *Sandfly Fever.*—Table XIV. shows the monthly case incidence of sandfly fever in the geographical areas abroad in which it occurred during 1921, and also the corresponding ratios per 1,000 of strength during 1920. In Malta, while the yearly case incidence was slightly reduced, there was a higher case incidence in July and August than in 1920. The second outbreak in September 1920 was absent in 1921. In Egypt and Palestine, the yearly case incidence is practically identical with last year, and the monthly case incidence in the two years calls for no comment. The very marked reduction of the case incidence in Iraq for 1921, compared with 1920, is shown in Chart V., page 39. Table XIII. shows the case incidence in stations abroad. Judging from the experience of the past few years, it would appear that the severity of sandfly fever outbreaks

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CHART IV. MONTHLY CASE INCIDENCE OF SICKNESS IN RATIOS PER 1000 OF STRENGTH FOR GEOGRAPHICAL AREAS ABROAD IN 1921 & FOR IRAQ IN 1920. CASES OF 48 HOURS OR LESS DURATION ARE EXCLUDED.

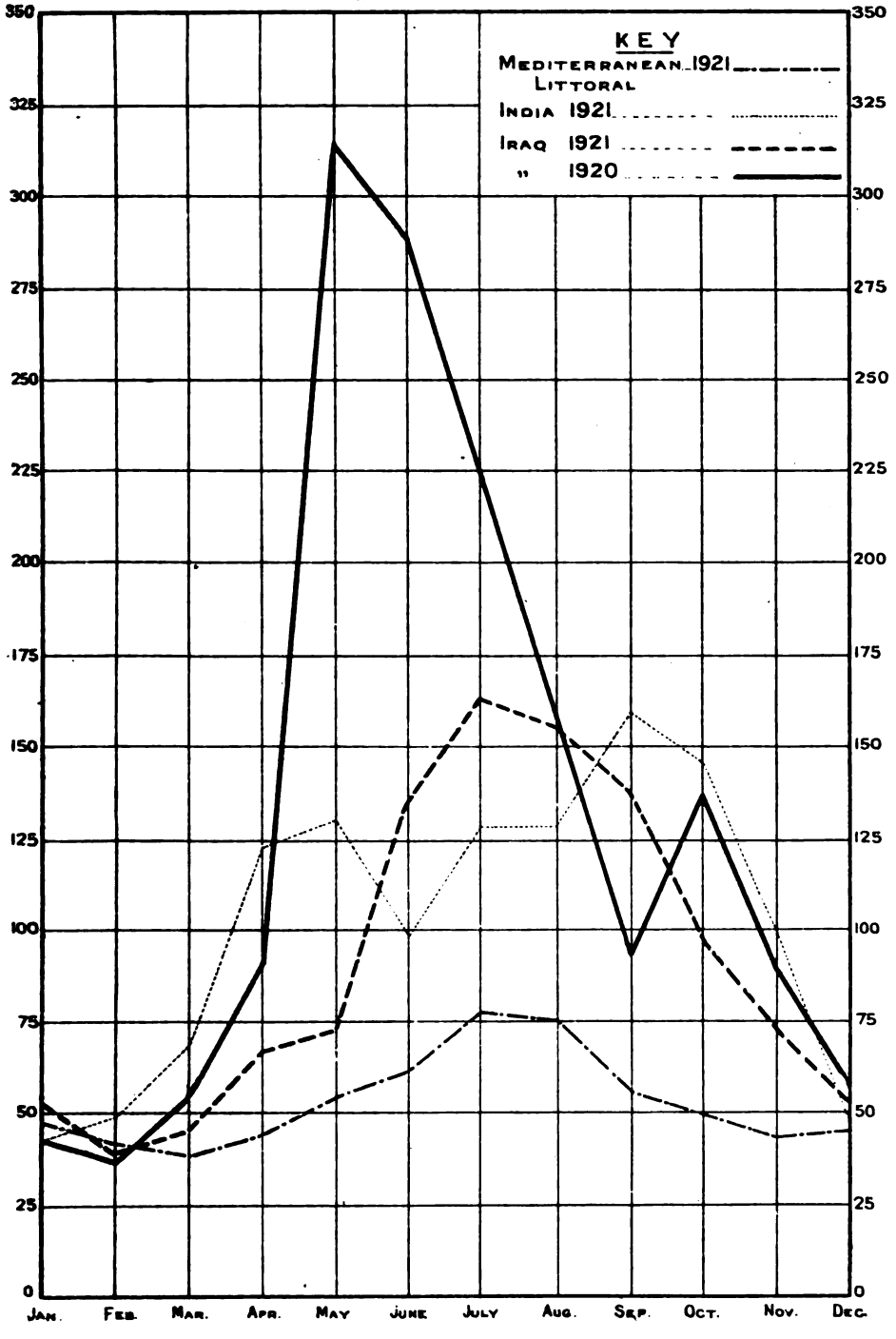

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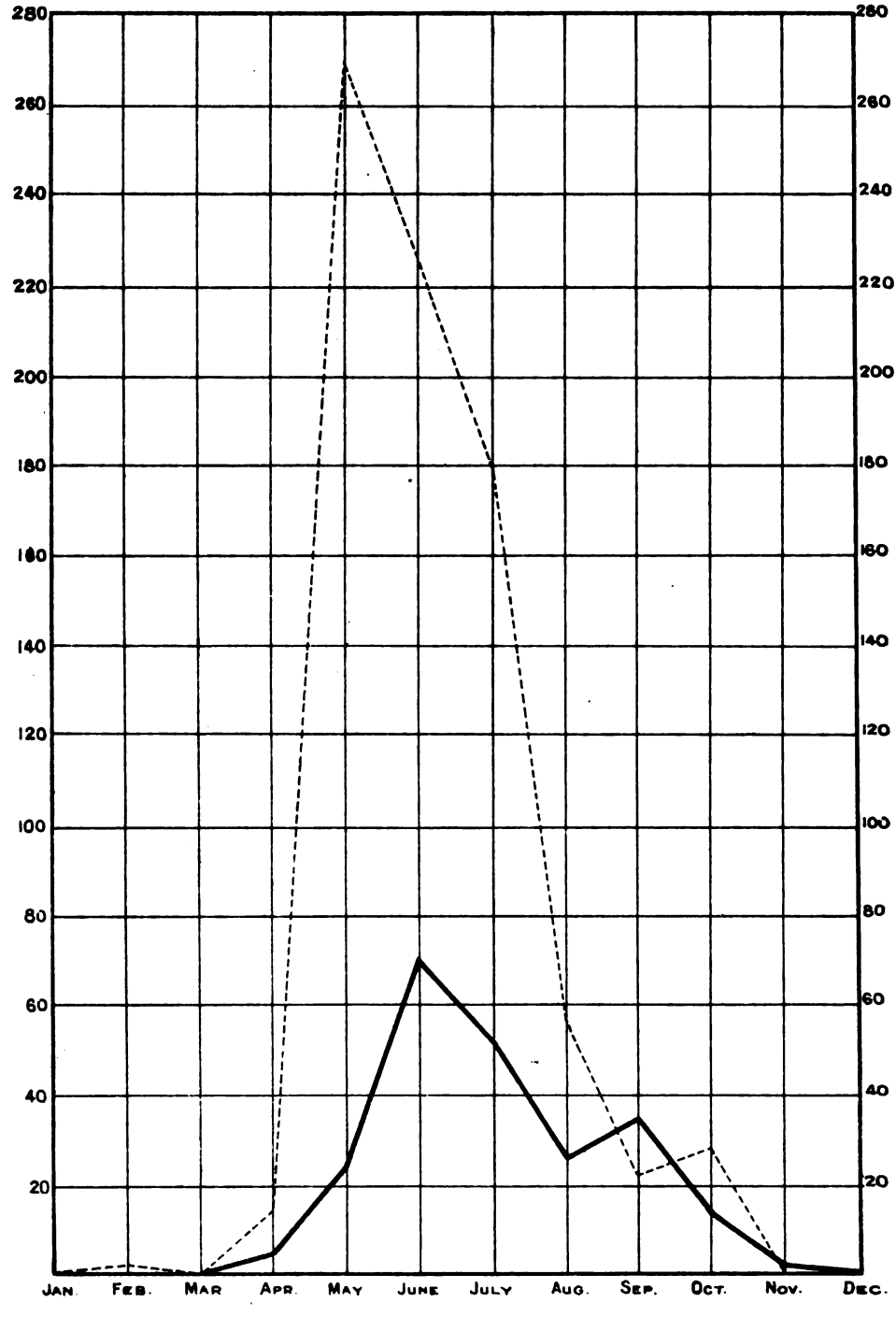
CHART V. MONTHLY CASE INCIDENCE OF SAND-FLY FEVER IN IRAQ, IN RATIOS PER 1000 OF STRENGTH DURING 1920 & 1921.



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in Iraq vary markedly from year to year, and, consequently, it is impossible to say how much the lowered case incidence was due to the prophylactic measures taken. Apart from these measures, there were other factors which probably played their part in lessening the incidence of the disease. The type was undoubtedly milder than in 1920, and also the huts in that year were mostly new and had not had time to dry, thus possibly forming a more suitable *nidus* in which sandflies could live and breed. A bigger proportion than in 1920 of personnel had already spent one period of hot weather in Iraq. In practice, it is usually found that the disease is commoner and of a more severe type in personnel fresh to the country. General prophylactic measures such as regular spraying of quarters, application of preventive ointments, wearing of slacks after sundown, prevention of moisture near huts, covering of sumps, limewashing buildings both in spring and midsummer, placing beds towards the centre of rooms away from the walls, and, lastly, an adequate supply of overhead fans in quarters, have all undoubtedly helped to lower the case incidence.

2. The medical officer in charge of the Baghdad Aerodrome reports as follows :—

> "As regards treatment of the disease, this has been markedly successful, in that the loss of time from work by the patient has been very short. A routine treatment consisting of the following measures has been adhered to :—
>
> "The patient has been put to bed and given a full dose of tincture of opium, and a full dose of vegetable purgative, followed by a saline purge. All food of every description has been withheld, even milk. The patient has been allowed to have minerals, or lime juice and water, and nothing else. He has been given aspirin in ten-grain doses, three times a day, and a four-hourly temperature chart has been kept when the temperature is raised.
>
> "In almost all cases, the return to the normal temperature has been in two to three days. When the temperature has been above 103° F., ice packs and ice bags have been employed. The convalescence has been rapid, and a quick recovery has been made without complications.
>
> "The withdrawing of all food has had a most beneficial effect. The tongue has rapidly got clean, and the bad taste in the mouth, so often complained of, disappeared, so that when the temperature has fallen to normal, and in most cases below normal, the patient is able to eat and enjoy his food. Where milk or light diet has been given, the tongue has remained dirty, and a bad taste has persisted after the temperature had fallen, and recovery has been delayed and convalescence has not been so rapid. To return to the routine treatment, the patient has been well fed when the temperature has become normal, and has been kept in bed for a further 48 hours, and then allowed up in the evening for the next two days, and when the

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pulse has been normal and steady he has then been discharged to 48 hours' light duty. This has been the general routine during the early and middle summer, but as the summer advanced, it was found that, owing to the general condition of the men throughout the station, their general vitality and resistance to disease was much lowered by the effects of the hot weather, and the hard work that they had to perform throughout the summer months, and recovery was more protracted and longer convalescence was required."

3. Sandfly fever in India occurred principally at Karachi and Lahore. Owing to the prevalence of malaria and "pyrexias of uncertain origin," the differential diagnosis presented greater difficulties than elsewhere.

4. Research carried out at Malta by the R.A.F. bacteriologist resulted in a spirochæte having morphological characters very similar to the *leptospira icterohæmorrhagiæ* being isolated from cases of sandfly fever. Briefly, the work was carried out in the following manner:—A nominal roll of the R.A.F. personnel at Calafrana, Malta, was prepared, showing the term of service out of England, the nature of any previous fever, and date of T.A.B. inoculation. From this roll it was easy to isolate all those who had not spent a summer abroad before. These men were inspected and had their temperature taken daily. Any who had fever were immediately admitted to sick quarters. Those with a temperature of 99° F. were instructed to report at the laboratory a few hours later to have their temperature again recorded. In this way cases of fever were diagnosed in their early stage. From previous work done by Birt and others, it was proved that the blood of man was infective by direct transmission to other men only on the first day of disease. Thus it was decided to limit the blood-culture work to the first day of disease. All cases admitted to the sick quarters were carefully gone over, and only those showing the typical symptoms of sandfly fever were accepted for the investigation. In all, 26 cases of apparent sandfly fever were investigated. To aid in the differential diagnosis these cases had their blood examined daily for 14 days for malaria parasites, total and differential leucocyte counts. Venupuncture was performed in every case on the first day of the fever. The blood collected was disposed of as follows:—

2 c.c. was inoculated into 1 c.c. of Wenyon-Noguchi medium.

5 c.c. was inoculated into 30 c.c. of Wenyon-Noguchi medium.

5 c.c. was inoculated into 30 c.c. of nutrient broth.

3 to 5 c.c. was inoculated into guinea-pigs intraperitoneally in 15 cases.

The remaining blood was used to carry out the Wassermann test and agglutination test against *B. typhosus*, *B. paratyphosus A and B*, *B. enteritides*, Gaertner, *B. dysenteriæ*, Shiga and Flexner, *M. melitensis* and *paramelitensis*. On the tenth day of disease the

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TABLE XIII.—CASE INCIDENCE OF SANDFLY FEVER IN STATIONS ABROAD.

Mediterranean.			Egypt and Palestine.			Iraq.			India.		
Station.	Average Strength.	No. of Cases.	Station.	Average Strength.	No. of Cases.	Station.	Average Strength.	No. of Cases.	Station.	Average Strength.	No. of Cases.
Feneraki -	63	3	Aboukir -	804	5	Baghdad -	861	163	Ambala -	283	25
Malta - -	379	93	Abbassia }			Basrah }	200	30	Bangalore -	84	1
"Pegasus" -	64	1	Cairo - }	860	38	Shaibah }			Cawnpore -	102	7
Other.			Heliopolis }			Hinaidi -	78	63	Karachi -	302	102
Stations -	32	—	Abu Sueir -	223	7	Mosul - -	135	43	Lahore - -	248	105
			Almaza -	101	1	Other			Lower Barian	116	6
			Amman -	28	4	Stations -	8	4	Parachinar -	82	5
			Moascar -	264	5				Peshawar -	67	3
			Ramleh -	130	25				Risalpur -	261	12
			Other						Other		
			Stations -	230	—				Stations -	253	30
Total - -	538	97		2,640	85		1,282	303		1,798	296
Ratios per 1,000 -		180·3			32·2			236·4			164·6

Three cases of Sandfly occurred amongst drafts *en route* (average strength, 128).

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Table XIV.—Monthly Case Incidence of Sandfly Fever Abroad.

	Malta.			Egypt and Palestine.			Iraq.			India.		
	No. of Cases.	Ratios per 1,000.		No. of Cases.	Ratios per 1,000.		No. of Cases.	Ratios per 1,000.		No. of Cases.	Ratios per 1,000.	
	1921.	1921.	1920.	1921.	1921.	1920.	1921.	1921.	1920.	1921.	1921.	1920.
January	—	—	—	1	0·4	—	—	0·4	—	—	—	Not available.
February	—	—	—	—	—	—	—	—	1·7	1	0·5	
March	—	—	—	—	—	—	—	—	—	18	9·2	
April	—	—	2·4	1	0·4	3·7	5	4·0	14·7	72	41·4	
May	—	—	2·4	5	1·9	2·1	35	25·4	270·0	34	19·9	
June	8	20·4	18·9	21	7·4	3·8	93	71·0	227·0	13	7·4	
July	43	131·1	80·3	17	6·3	8·1	67	52·1	179·1	16	9·2	
August	25	66·0	12·7	18	6·5	5·6	33	25·6	57·1	29	17·1	
September	15	39·1	122·9	5	1·9	5·8	46	35·7	23·4	58	34·0	
October	2	5·2	24·5	11	4·2	1·3	20	15·7	28·5	41	24·0	
November	—	—	—	5	2·0	1·2	3	2·1	—	13	7·1	
December	—	—	2·1	1	0·4	—	1	0·7	—	1	0·5	
Total	93	245·4	266·5	85	32·2	31·3	303	236·4	742·0	296	164·6	

One case occurred in May and two in November amongst drafts *en route*.
Three cases occurred in aircraft carriers in July and August.

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blood was again collected for agglutination tests. The urine was examined daily, especially for albumen, bile and spirochætes.

5. *Synopsis of results.*
   (i) Blood cultures.
   (ii) Inoculation of guinea-pigs with whole blood.
   (iii) Inoculation of guinea-pigs with cultures of spirochætes.
   (iv) Inoculation of man with cultures of spirochætes.
   (v) Blood counts.
   (vi) Wassermann and agglutination tests.
   (vii) Urine examination.

(i) *Blood Culture.*—Dark ground illumination of the primary blood cultures in the Wenyon-Noguchi medium revealed, after the fifth to sixth day of incubation at 27° C., the presence of spirochætal bodies in six cases. These spirochætes morphologically resembled leptospira. Three of these primary cultures were successfully subcultured. Unfortunately, one of the subcultures was contaminated in transit from Malta to England.

(ii) *Inoculation of Guinea-pigs with Whole Blood.*—Most of the guinea-pigs inoculated with the whole blood of sandfly fever cases showed a rise of temperature of about 2° F. for the first 48 hours after inoculation. Control pigs inoculated with blood from supposedly sandfly fever-free cases failed to show this rise. Two of the control pigs collapsed and died in the first 24 hours after inoculation. There was an epidemic of diarrhœa amongst the pigs—only a small number were really healthy before experiment. Great difficulty was experienced in getting healthy pigs. All the pigs that died were examined, cultures were made of their heart blood, liver and kidneys, and the latter organs sectioned. In no case were spirochætes found. None of the pigs developed any symptoms of epidemic jaundice.

(iii) *Inoculation of Guinea-pigs with Cultures of Spirochætes.*—As the primary cultures might contain toxins as well as the spirochætes, they were not used for inoculation experiments on animals or man. Three guinea-pigs were inoculated intraperitoneally with primary subcultures, seven, eight and ten days old respectively. None of these pigs died or showed any symptoms of jaundice or hæmorrhage. Six guinea-pigs were inoculated with one week old secondary subcultures. One of these pigs died on the tenth day after inoculation. There were neither fever nor any symptoms of note. Attempts to isolate spirochætes from the heart blood, liver and kidneys failed. Six guinea-pigs were inoculated with four weeks old primary subcultures. One of these pigs died on the twelfth day after inoculation without symptoms of fever, hæmorrhage or jaundice, nor could spirochætes be recovered from its blood or organs.

(iv) *Inoculation of Man with Cultures of Spirochætes.*—Only three men have been inoculated up to date—two in an area where sandfly fever occurs, and one in a sandfly fever free area.

Case 1 was inoculated with ½ c.c. of primary subculture (six days old);

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Case 2 was inoculated with ½ c.c. of primary subculture (six days old);

Case 3 was inoculated with 1 c.c. of primary subculture (six weeks old);

and nine days later a further inoculation of 1 c.c. of a six-day old secondary subculture. In none of the cases was there any definite fever. Case No. 1 had a temperature of 99° F. or over from the sixth to eighth day after inoculation. The highest point registered was 99·8° F. There were pains in the legs and suffusion of the conjunctivæ for several days in cases Nos. 1 and 2. Case No. 3 developed headache, anorexia, marked nausea, tendency to syncope, and pains in the calves on the seventh to ninth days after the first inoculation. The blood picture showed a distinct leucocytosis (15,000 per c.mm.). A similar result, with more pronounced symptoms, lasting for several days, followed the second inoculation. On account of jaundice developing on the eleventh day of disease in one of the sandfly fever cases under investigation in Malta, it was considered inadvisable to do further inoculations in man.

(v) *The Blood Count.*—The blood picture showed, in practically all the cases, a leucopenia (4,000 per c.mm.) for the first three to five days of the disease, followed by a leucocytosis shooting up to 15,000 to 20,000 per c.mm. on or about the ninth to eleventh day of disease. This marked rise of the total white count on the ninth to eleventh day coincides with a tendency for the fever to relapse in some of the cases. It should be noted that there were distinct relapses of fever in three cases. In one there was a relapse on the eleventh day accompanied by jaundice, and a further relapse on the twenty-fifth day of disease unaccompanied by jaundice. The fever recurred on the eleventh day in another case, and on the twelfth day in a third case. Otherwise the cases selected gave the typical clinical picture of sandfly fever.

(vi) *Wassermann and Agglutination Tests.*—These tests were negative in all cases, due allowance being made for the protective inoculation with T.A.B. vaccine.

(vii) *Urine Examination.*—The urine in two cases showed a small amount of albumen; one of them also contained bile, in a relapse on the eleventh day of disease. No spirochætes were found in the urine.

(viii) *Conclusions.*—At present, owing to the inability to transmit the disease in typical form to man or animals, no claim is made to the specificity of the spirochæte isolated. Cross immunity experiments are in progress.

6. In Baghdad some thorough and careful research carried out by a R.A.F. medical officer in an aeroplane case converted into a small makeshift laboratory, has produced the following results. Blood count figures obtained at Baghdad for the first week of the disease in 70 cases proved to be identical with the blood picture in sandfly fever patients at Malta. Blood films of 80 patients on three successive days of the disease proved negative, as were all attempts at culture of the causal organism.

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Intraperitoneal injections of 5 c.c. of blood from first day sandfly fever patients into twelve guinea pigs in two series proved negative. After inoculation the pigs were taken to the Central Laboratory Baghdad, for completion of the experiment. Heavy mortality amongst them during July prevented further work. Attempts at finding eggs, larvæ or pupæ proved unsuccessful, although the work was carried on steadily from April to September, and all likely sources thoroughly examined.

7. *Malaria.*—Table XV. gives the monthly case incidence of primary, and all cases of malaria abroad. One primary and eleven recurrent cases occurring among drafts *en route* are not included. The total case incidence ratio per 1,000 of strength in Egypt and Palestine fell from 61·3 in 1920 to 24·6 in 1921; the primary rates from 33·3 to 6·8. The primary rate in Iraq fell from 32·3 in 1920 to 11·7 in 1921, although the rate for all cases remained approximately the same. The total case incidence of malaria per 1,000 of strength in India, accounts for more than a quarter of the total sickness there, exclusive of 48-hours cases. Greater attention to the care and use of mosquito nets, the wearing of slacks at sundown, the use of preventive ointments, and more thorough anti-mosquito measures in general, should go far to reduce this unduly high malaria incidence. Table XVI. shows the case incidence of primary and all cases in stations abroad. Figures relating to the various types of malaria are shown in Table VIII., page 28.

TABLE XV.—MONTHLY CASE INCIDENCE OF MALARIA ABROAD.

Month.	Egypt and Palestine.		Iraq.		India.	
	Primary Cases. No.	All Cases. No.	Primary Cases. No.	All Cases. No.	Primary Cases. No.	All Cases. No.
January	—	3	3	6	5	8
February	—	1	—	2	2	8
March	—	2	1	9	6	10
April	—	2	—	14	11	30
May	—	3	2	15	16	37
June	1	8	3	15	11	42
July	3	10	2	14	17	48
August	3	10	3	15	33	60
September	2	6	1	2	81	122
October	7	11	—	6	73	114
November	2	6	—	1	47	87
December	—	3	—	2	11	41
Total	18	65	15	101	313	607
Case ratios per 1,000 per annum	6·8	24·6	11·7	78·8	174·1	337·6

No case of malaria occurred in Malta.

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Table XVI.—Case Incidence of Malaria in Stations Abroad.

Egypt and Palestine.				Iraq.				India.			
Station.	Average Strength.	Primary Cases. No	All Cases. No.	Station.	Average Strength.	Primary Cases. No.	All Cases. No.	Station.	Average Strength.	Primary Cases. No.	All Cases. No.
Aboukir - -	804	2	8	Baghdad - -	861	5	29	Ambala - -	283	48	71
Abbassia - -	} 860	2	19	Basrah - -	} 200	3	26	Bangalore -	84	—	1
Cairo - -				Shaibah - -				Cawnpore -	102	11	21
Heliopolis -				Hinaidi - -	78	2	14	Karachi - -	302	105	201
Abu Sueir -	223	3	5	Mosul - -	135	4	31	Lahore - -	248	69	117
Almaza - -	101	—	3	Other Stations -	8	1	1	Lower Barian -	116	2	20
Helwan - -	164	4	8					Parachinar -	82	17	47
Moascar - -	264	2	3					Peshawar -	67	4	22
Ramleh - -	130	5	18					Quetta - -	159	12	24
Other Stations -	94	—	1					Risalpur - -	261	16	33
								Other Stations -	94	29	50
Total -	2,640	18	65	Total -	1,282	15	101	Total -	1,798	313	607
Ratios per 1,000	—	6·8	24·6	Ratios per 1,000	—	11·7	78·8	Ratios per 1,000	—	174·1	337·6

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8. *Dysentery.*—Table XVII. shows the monthly case incidence of dysentery under primary, and all cases, for geographical areas abroad. Clinical dysentery is included, as in last year's report. Table XVIII. shows the case incidence of the different types of dysentery, divided into primary, and all cases, for stations abroad. In the Mediterranean Littoral the case incidence rate is approximately half that of 1920 and the prevailing type remains the same, *i.e.*, bacillary. The comparatively few recurrences among the clinical cases is suggestive that the majority of them were also bacillary dysentery. The case incidence in Iraq is more than three times that of 1920, only five cases out of the 101 reported being of the bacillary type. It is difficult to account for the increase, but the fact remains that dysentery is associated with defective hygiene. At Mosul, where the highest rate is shown, flies were more abundant than elsewhere, and the water supply was not above suspicion. In India, there were nearly as many relapses as primary cases, this applying to both clinical and protozoal types, there being no bacillary cases reported. Unsatisfactory hygienic conditions in India are sufficient to account for the case incidence.

TABLE XVII.—MONTHLY CASE INCIDENCE OF DYSENTERY ABROAD.

Month.	Mediterranean Littoral.		Iraq.		India.	
	Primary Cases. No.	All Cases. No.	Primary Cases. No.	All Cases. No.	Primary Cases. No.	All Cases. No.
January	7	7	1	5	—	1
February	1	2	1	2	—	—
March	—	1	1	1	1	1
April	4	5	3	3	2	2
May	1	1	9	10	9	15
June	2	2	5	8	2	11
July	3	4	6	7	12	22
August	4	5	10	16	3	8
September	10	10	19	20	7	9
October	7	10	13	15	3	4
November	9	10	9	11	4	11
December	1	1	1	3	2	3
Total	49	58	78	101	45	87
Case rates per 1,000 per annum	14·8	17·5	60·8	78·8	25·0	48·4

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TABLE XVIII.—CASE INCIDENCE OF DYSENTERY IN STATIONS ABROAD.

Station.	Average Strength.	Clinical.		Bacillary.		Protozoal.		Total.	
		Primary Cases.	All Cases.	Primary Cases.	All Cases.	Primary Cases.	All Cases.	Primary Cases.	All Cases.
		No.	No.	No.	No.	No.	No.	No.	No.
MEDITERRANEAN LITTORAL.									
Abbassia, Cairo, and Heliopolis	860	8	11	6	7	5	6	19	24
Aboukir	804	7	7	2	2	–	2	9	11
Abu Sueir	223	1	3	–	–	–	–	1	3
Almaza	101	4	4	2	2	–	–	6	6
Feneraki	63	1	1	–	–	–	–	1	1
Helwan	164	4	4	2	2	–	–	6	6
Malta	379	2	2	2	2	–	–	4	4
Ramleh	130	–	–	–	–	1	1	1	1
Suez	32	–	–	–	–	2	2	2	2
Others	550	–	–	–	–	–	–	–	–
Total	3,306	27	32	14	15	8	11	49	58
Ratios per 1,000 of Total Strength	—	8·2	9·7	4·2	4·5	2·4	3·3	14·8	17·5
IRAQ.									
Baghdad	861	8	10	4	4	25	35	37	49
Basrah and Shaibah	200	4	5	1	1	9	10	14	16
Hinaidi	78	–	1	–	–	4	4	4	5
Mosul	135	2	3	–	–	21	27	23	30
Others	8	–	1	–	–	–	–	–	1
Total	1,282	14	20	5	5	59	76	78	101
Ratios per 1,000 of Total Strength	—	10·9	15·6	3·9	3·9	46·0	59·3	60·8	78·8
INDIA.									
Ambala	283	2	3	–	–	9	12	11	15
Bangalore	84	–	–	–	–	–	1	–	1
Cawnpore	102	3	3	–	–	–	–	3	3
Karachi	302	7	17	–	–	5	17	12	34
Lahore	248	–	2	–	–	1	3	1	5
Lower Barian	116	2	2	–	–	–	2	2	4
Parachinar	82	–	1	–	–	7	11	7	12
Quetta	159	–	1	–	–	7	9	7	10
Risalpur	261	1	1	–	–	–	–	1	1
Others	161	–	1	–	–	1	1	1	2
Total	1,798	15	31	–	–	30	56	45	87
Ratios per 1,000 of Total Strength	—	8·3	17·2	–	–	16·7	31·2	25·0	48·4

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9. *Heatstroke and Sunstroke.*—In practice it has been found that many cases have been reported by medical officers during the hot weather from Egypt and Palestine, Iraq and India, which were, in their opinion, undoubtedly caused by the direct, or less often the indirect, action of the sun's rays. Owing to their comparative mildness, however, these cases did not warrant the terms " Sunstroke " and " Heatstroke," as generally understood, being applied to them, the only diagnoses available in the official Nomenclature of Diseases. It was consequently decided to introduce the term " Heat Exhaustion " to cover this mild type of case. The usual symptoms are comparatively slight pyrexia, dizziness, intense headache and pain in the back and limbs, accompanied by varying degrees of collapse. At the same time the attention of medical officers has been drawn to the fact that the term " heat exhaustion " should not be used indiscriminately, as a simple method of diagnosing sudden pyrexias, which in many cases appear to be mainly due to constipation. In all cases where the term is used instructions have been issued that the previous history of the case should contain sufficient information to warrant the diagnosis of heat exhaustion being made. During the sandfly fever season heat exhaustion and sandfly fever cases are apt to be confused. The differential diagnosis rests mainly on the fact that sandfly fever cases show a leucopenia with a relative lymphocytosis in the early stages of the disease. The terms " Heatstroke " and " Sunstroke " together with their text book synonyms " Insolation " and " Thermic Fever " are now reserved for the variety in which the onset is sudden, usually accompanied by hyperpyrexia, with or without cerebral symptoms and unconsciousness. This classification was not in use during 1921 but will be used in future reports.

10. During 1921, eighty-two cases occurred overseas, with six deaths. Twelve cases were reported from Egypt and Palestine, compared with twenty-four in the preceding year. Thirteen were reported from Malta. Thirty-eight cases occurred in Iraq, with three deaths; eighteen cases, also with three deaths, in India. A single case occurred on board ship.

11. *Enteric Group.*—Thirty-one cases were reported abroad, involving four invalids to the United Kingdom and two deaths. Details will be found in Table VIII., page 28. Of the nine cases reported from the Mediterranean Littoral, six, four typhoid and two paratyphoid B., occurred at Aboukir, and were probably attributable to the insanitary conditions of the surrounding villages. The cases of typhoid occurred between July and September and the paratyphoid B. in October and December. Four cases were fully protected by prophylactic inoculation: no details of inoculation were given in the remaining two cases. A single case of paratyphoid B. also occurred at Cairo in April, no details of inoculation being given. All cases were discharged to duty. One case each of paratyphoid A. & B. occurred amongst drafts

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proceeding to the United Kingdom, the disease being contracted in India and Iraq respectively. Fifteen cases occurred in Iraq, five of typhoid, nine of paratyphoid A. and one of paratyphoid B. Four of the typhoid cases occurred at Baghdad in May, November and December, and one at Basrah in May. Two cases were reported as fully protected, and no details were given in the remaining cases. The nine cases of paratyphoid A. all occurred at Mosul, seven in June and one each in August and September. Seven were fully protected by inoculation; details were lacking in the remaining two cases. Reference is made elsewhere to the defective sanitation at Mosul. A single case of paratyphoid B. occurred at Basrah and was stated to be fully protected by inoculation. Seven cases of typhoid, with two deaths, were reported from India. Two cases were stated to be fully, and one partly, protected by inoculation; details of inoculation were not given in the remaining cases. Two cases occurred at Lahore, in March and May, and single cases at Bangalore (January), Tank (March), Risalpur (July), Rawal Pindi (August), Deolali (October).

12. *Glare and its Effects.*—Work carried out during 1921, mainly in India, appears to indicate that the glare of the tropics brings about a diminution in the range of accommodation, and lack of proper power of co-ordination of the extrinsic ocular muscles. These conditions in pilots lead to deterioration in landing capacity, more especially if defects in accommodation and ocular balance have previously existed As mentioned in last year's report, the ordinary tinted glasses are useless, because they cause unnatural landscapes; in fact, the average pilot usually removes them when landing. Samples of special Crookes' glass, U.B. and U.D. types, were issued to India and Egypt during the year, and the reports received were unanimously favourable. The two types vary only in degree of tint; and it is interesting that in Egypt the darker type was preferred, while in India the lighter type was selected. This can be accounted for by the lighter colour of the ground (sand) in Egypt. Further quantities have been manufactured, and it is hoped that by universal issue to flying ranks, the effects of glare will be largely eliminated as a factor in bad landings.

13. *Other Diseases.*—Three cases of small-pox were reported, one from India and two from Iraq. The case in India was contracted at Rawal Pindi and was of a mild type. Vaccination had not been performed since infancy. A further mild type of case occurred at Mosul, vaccination had been performed without effect within a year. A severe case, involving extensive pitting was contracted at Baghdad. The patient had consistently refused vaccination since enlistment, and had not been vaccinated previously. He was still in hospital at the end of the year.

14. A mild case of cholera occurred at Barian (India) in September.

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TABLE XIX.—PRINCIPAL STATIONS ABROAD. SICKNESS, 1921 AND 1920.

Station.		Average Strength.	Average duration of each case.		Average number sick daily.				Ratios per 1,000.						
							Total.		Cases.		Deaths.	Average number sick daily.			
			In Sick Quarters.	Total.	In Sick Quarters.	In Hospital.	Including 48-hour Cases.	Excluding 48-hour Cases.	Including 48-hour Cases.	Excluding 48-hour Cases.		In Sick Quarters.	In Hospital.	Total.	
														Including 48-hour Cases.	Excluding 48-hour Cases.
			days	days											
Abbassia - Cairo - Heliopolis	1921	860	3·2	8·3	16·1	29·0	45·1	40·4	2297·7	848·8	7·0	18·7	33·7	52·4	47·0
	1920	*670*	*2·8*	*12·6*	*7·7*	*34·8*	*42·5*	*40·0*	*1838·8*	*801·5*	*6·0*	*11·5*	*51·9*	*63·4*	*59·7*
Aboukir -	1921	804	5·8	15·7	9·0	19·4	28·4	27·6	823·4	536·1	8·7	11·2	24·1	35·3	34·3
„ -	*1920*	*587*	*2·9*	*11·1*	*7·6*	*27·2*	*34·8*	*32·1*	*1964·2*	*729·1*	*10·2*	*12·9*	*46·3*	*59·3*	*54·7*
Abu Sueir -	1921	223	3·0	11·8	1·4	4·8	6·2	5·9	860·9	479·8	—	6·3	21·5	27·8	26·5
Ambala -	1921	283	1·9	14·4	0·4	12·5	12·9	12·6	1148·4	886·9	7·1	1·4	44·2	45·6	44·5
Baghdad -	1921	861	4·1	8·3	21·5	25·3	46·7	43·1	2391·4	996·5	8·1	25·0	29·4	54·2	50·1
„ -	*1920*	*667*	*5·3*	*11·9*	*15·2*	*32·8*	*48·0*	*46·6*	*2202·4*	*1695·6*	*21·0*	*22·8*	*49·2*	*72·0*	*69·9*
Basrah - Shaibah -	1921	200	3·6	12·2	3·3	9·4	12·6	11·9	1890·0	955·0	20·0	16·5	47·0	63·0	59·5
Karachi -	1921	302	1·6	5·2	6·4	20·4	26·8	21·9	6251·7	2003·3	6·6	21·2	67·6	88·7	72·5
Lahore -	1921	248	1·6	7·1	3·7	22·4	26·1	22·6	5387·1	1903·2	—	14·9	90·3	105·3	91·1
Malta -	1921	379	3·6	8·9	2·6	5·0	7·6	7·2	820·6	527·7	—	6·9	13·2	20·2	18·3
„ -	*1920*	*321*	*4·5*	*11·0*	*4·6*	*8·1*	*12·7*	*12·3*	*1311·5*	*959·6*	*6·2*	*14·3*	*25·2*	*39·6*	*38·3*
Ismailia - Moascar -	1921	264	4·1	12·0	2·5	5·5	8·0	7·4	916·7	352·3	11·4	9·5	20·8	30·3	28·0
Risalpur -	1921	261	1·6	5·6	1·3	4·7	6·0	4·8	1513·4	390·8	11·5	5·0	18·0	23·0	18·4

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CHAPTER IV.

MISCELLANEOUS.

Section I.—Central Medical Board.

1. The Central Medical Board was constituted on 29th September 1921. In addition to the duties previously carried out by the Aviation Candidates' Medical Board, it also exercises a special supervision of officers already in the service. Its actual composition remains unchanged. Its functions may be briefly set forth as follows :—

(i) The examination of all candidates for commissions in the Royal Air Force, especially to determine their physical and temperamental fitness for flying. This involves the comparison of the results obtained from each candidate with certain standards fixed by experience, and may be regarded as an example of a scientific attempt to estimate vocational suitability. The factors to be considered are :—

(*a*) The likelihood of the candidate being able to acquire the art of flying.

(*b*) His physical capacity to withstand the strain of prolonged flying at home or abroad.

(*c*) The temperamental suitability of the candidate for rendering efficient combatant service in the air.

(ii) The examination of serving officers to ascertain the category in which each should be placed. The following categories are officially recognised for officers holding permanent commissions :—

Category A.—

(i) Officers under 30. Fit for full flying duties.

(ii) Officers between 30 and 40. Fit for general service, and for limited flying.

(iii) Officers over 40. Fit for general service.

Category B.—Fit for full flying duties in the United Kingdom only.

Category C.—Temporarily unfit for duties of category A or B

Category D.—Requiring treatment—

(i) in a convalescent hospital.

(ii) in a hospital.

Category E.—Permanently unfit for full flying duties.

Category F.—Permanently unfit for further service.

Officers holding short service commissions must be fit for full flying duties.

2. The candidates referred for examination to the board are classified as follow —

(i) Under arrangements made by the Air Ministry :—

(*a*) Officers of the Royal Navy and Army on being seconded to the Royal Air Force for flying duties.

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(*b*) Ex-officers, whether previously pilots or not, who apply for commissions in the general duties branch.

(*c*) Candidates for direct entry on short service commissions in the general duties branch.

(*d*) Candidates for direct entry on permanent commissions in the general duties branch, after nomination by recognised universities.

(*e*) Candidates for the R.A.F. (Cadet) College.

(*f*) Non-commissioned officers who are selected for flying duties.

(*g*) Officers and cadets who may be referred for an opinion as to their fitness for duty in the Royal Air Force (including short service officers nominated for permanent commissions).

(*h*) Officers invalided, or on sick leave, from abroad who are not admitted direct to hospital.

(*i*) Officers who have been placed in category F, by another medical board.

(ii) Under arrangements made by headquarters of areas or commands :—

(*a*) Officers of the Royal Air Force who are due to learn to fly.

(*b*) Officers and cadets who may be referred for an opinion as to their fitness for duty in the branch to which they belong.

(iii) Under arrangements made by the President of the Central Medical Board :—

Officers and cadets on completion of a course of treatment given by, or under the direction of, the specialist members of the board.

3. The routine procedure is as follows :—

With the exception of officers already placed in category F, all cases appearing before the board for the first time undergo complete examination comprising the general medical and surgical, aural, and ophthalmic, examinations, and the application of efficiency, and any other special tests deemed necessary. Past, personal and family history is carefully investigated. The records thus obtained are finally laid before the president and assessor for consideration as a whole, before a decision is formed. If the board is held within six months of the previous one, relevant special re-examination only is carried out. Further points to which particular consideration is given are :—

(i) *Aptitude for Flying.*

(*a*) Physical dexterity is judged from aptitude for sport, especially by all round proficiency in games requiring eye and limb co-ordination. Such proficiency implies the possession of normal visual acuity and good binocular fusion, both of which are among the standards required by the board.

(*b*) While undue reliance is not placed on the rotation tests (Barany) special inquiry is always directed into

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instances of air, swing, train or severe sea sickness. If for any reason an undue sensitivity to rotary or spinning motion is suspected, rotation tests are employed, in which the effects upon pulse and blood pressure, in addition to the time of persistence of nystagmoid movements, are recorded.

(*c*) Temperamental suitability is adjudged along the same lines as physical dexterity. In addition, where deemed necessary, special tests are employed, *e.g.*, the measurement of the psycho-motor reflexes by means of reflex time apparatus, and the degree of manual dexterity, together with liability to central fatigue, by means of the Schuster modification of McDougall's " dotter " machine.

(ii) *The special tests for physical efficiency and bodily endurance* are those which have already been described in previous publications, notably in the volume on Medical Problems of Flying (Special Report series No. 53, Medical Research Council 1920) and in the report of the health of the Royal Air Force for 1920.

(iii) *Combatant Service in the Air.*—The assessment of an officer's qualifications for combatant service in the air is only in part a function of the medical board, since candidates for admission to the Air Force will, usually, have been the subject of previous consideration by the executive selection board prior to medical examination. Serving officers, however, who have become temporarily unfit for flying duties are reconsidered in this respect. Past history is elicited with particular reference to the officer's attitude to, and record of, flying, and also to a certain extent of sports in which the element of personal risk is involved. His general demeanour during examination is noted, and, if indicated, mental exploration of his attitude to the subject, with the aid of such special tests as are deemed necessary, is undertaken.

4. The total number of examinations carried out by the board during 1921 was 840. One hundred and eighty-three of these were either re-examinations, or examinations of officers belonging to branches other than the general duties branch, *e.g.*, stores branch, medical. These 183 examinations are excluded as it has been found unnecessary to repeat the original examination in full detail in re-examinations, and no material of special medical interest, viewed from the flying standpoint, is provided by the remainder. Of the remaining 657 cases, 507 were accepted and 150 rejected. Table XX. shows the physical standard of the former, and Table XXI. the causes of rejection in the latter class. Defective vision alone accounts for the majority of rejections, and is also found in association with defective physical efficiency more frequently than the other causes of rejection shown in the table. The defective physical efficiency group is mainly composed of cases in which the efficiency of the cardio-vascular, respiratory and nervous control mechanisms fall below the standard previously ascertained to be essential from the examination of fit flying officers. Such candidates are for this reason deemed unlikely to withstand the strain of full flying duties.

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5. The war standards (given in last year's report) for the tests in Table XX. were originally based on a series of medical examinations of fit pilots during the war. These pilots were specially selected by the executive authorities as representative of the best type of pilot, who had, during the war, without special preliminary medical examination proved their capacity for prolonged and efficient air service without breakdown. The figures shown were rather low, owing to a certain degree of stress, present in every pilot at that time.

6. Column 4 of the table represents officers already granted short-service commissions, by the executive authorities, solely for flying capabilities and admitted to the service without special medical examination. Their continued success as pilots caused them to be selected for permanent commissions. The total rejects from this class were less than any other group, namely, four out of 32. Two of the four were over 30 years of age. Column 5 shows 51 successes out of a total of 90 examined. The marked discrepancy between the proportion of rejects in these two classes may be at any rate partly explained by the latter class containing many commissions originally granted without special medical examination for qualities other than flying. The pilots in column 4 were originally granted commissions solely for their flying abilities.

7. It will be observed that although the tests as a whole are merely used as adjuncts to the general examination, their results in columns 1, 2 and 3 exemplify the points of efficiency revealed in columns 4 and 5, and also by the examination of efficient pilots in war time, namely, that in addition to good nervous stability (test values not recorded in Table XX.) they possess—

(i) A steady pulse rate when sitting, not unduly accelerated either by standing or exercise, with a rapid return to normal after the latter.

(ii) A relatively high diastolic pressure with a pulse pressure under 50.

(iii) A satisfactory tone of abdominal musculature associated with efficient expiratory force.

(iv) Stability of the medullary centres and good bodily endurance as revealed by the results of breath holding and 40 mm. Hg. tests.

(v) A high vital capacity as judged by the standards of Professor Dreyer.

The numbers in brackets shown under the vital capacity figures represent those calculated by the Dreyer formulæ from sitting height, weight and chest measurement of the group concerned, and are his minimum class A standards; and it will be noticed that the actual vital capacities of all groups are higher than these standards.

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Table XX.—Accepted Pilots—Summary.

Test.	Cadets.	Candidates for Short Service Commissions.	N.C.O. Candidates.	Serving Officers examined for Permanent Commissions.	Serving Officers examined as to Fitness for Flying.	Total.
	1.	2.	3.	4.	5.	6.
Numbers	65	336	27	28	51	507
Age - - - - - - - - - yrs.	18·6	23·6	22·0	25·7	31·1	23·7
Height standing - - - - - - cms.	173·7	174·6	170·7	175·6	175·1	174·3
Height sitting - - - - - - cms.	89·7	89·6	90·3	90·8	90·8	90·3
Weight - - - - - - - kgms.	61·7	64·0	61·1	63·2	65·7	63·6
Chest - - - - - - - - cms.	85·3	86·8	85·2	85·8	88·8	86·6
Vital capacity - - - - - - c.cms.	4,578 (4,124)	4,695 (4,211)	4,390 (4,139)	4,564 (4,209)	4,658 (4,349)	4,653 (4,223)
Breath-holding - - - - - - secs.	78·5	73·4	78·5	81·9	72·8	74·7
Expiratory force - - - - - mm. Hg.	120·7	131·5	152·4	145·7	130·6	132·0
40 mm. Hg. test - - - - - - secs.	57·8	60·0	55·8	60·6	60·3	59·5
Systolic pressure - - - - - mm. Hg.	125·1	130·0	28·6	127·1	124·0	128·4
Diastolic pressure - - - - - ,,	78·7	81·4	78·6	81·5	80·6	80·8
Pulse sitting - - - - - - per min.	74·0	73·7	69·1	70·3	74·6	73·4
Pulse standing - - - - - - ,,	84·5	79·4	75·4	76·2	80·6	79·8
After exercise - - - - - - ,,	105·2	104·0	102·6	97·2	100·6	103·2
Return to normal - - - - - - secs.	24·4	22·8	23·7	27·7	21·1	23·1

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TABLE XXI.—CAUSES OF REJECTION BY THE CENTRAL BOARD DURING 1921.

Reason for rejection.	Cadets.	Candidates for Short Service Commissions.	N.C.O. Candidates.	Serving Officers examined for Permanent Commissions.	Serving Officers examined for Fitness for Flying.	Totals.
(1) Vision - - -	9	24	9	1	6	49
(2) Ear, Nose, Throat and Teeth - -	2	4	1	—	4	11
(3) Medical and Surgical	3	15	—	2	9	29
(4) Defective Physical Efficiency - -	7	14	2	—	12	35
(5) Combinations of 1, 2, 3 with 4 - -	9	8	—	1	8	26
Totals - - -	30	65	12	4	39	150

Section II.—Physical Efficiency of Officers in the R.A.F.

1. In addition to medical examinations which are carried out as occasion arises, it is the practice in the Royal Air Force to examine medically all officers at the time of the completion of the yearly confidential report towards the end of the calendar year. The results obtained are recorded on a special card which includes the results of both the routine clinical examination, and the physical efficiency tests dealt with in the preceding section. The examination consequently reveals any organic defects which may have developed during the previous twelve months, and in addition gives a clear indication of the physical efficiency of the individual. His response to the special tests employed can be compared with the standards laid down and with his own previous figures and also the effects of climate (in the tropics) and the effect of the flying done in the preceding twelve months noted. Particular importance is attached to such examinations, as an officer who has done an unusual amount of flying under trying conditions and has lived in a climate such as that of Iraq or India, for a year or more, and is found physically fit for full flying duties year after year, may be assumed to be of the type likely to withstand the strain of war flying when it comes. The examination is applied to all officers, and not to pilots only, for the reason that a stores or medical officer, although his duties are essentially on the ground both in peace and war, must possess stamina capable of withstanding war strain. Past experience has shown that the results of these tests afford valuable information in this respect — whereas a simple routine clinical examination alone does not enable the mental and physical stamina to be gauged with the same degree of accuracy.

2. The total strength of officers in the Royal Air Force on 31st December 1921 was 2,905. The total number of cards received was 2,641. The non-receipt of the balance is partly due to the examination being confined to officers on duty, thereby excluding those in hospital, on sick leave or half pay; and partly to the impossibility of examining officers out of touch with R.A.F. medical officers who alone are conversant with the technique

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of certain tests employed. Table XXII. shows the proportion of officers fit and unfit for flying duties, in the different branches of service, in respect of all cards received. Two hundred and eighty-two cards of the 2,641 received were incomplete, mainly in some one particular only, and in consequence have been eliminated from the analyses. Breakage of apparatus such as glass U-tubes, and sphygmomanometers, and the occasional absence of weighing machines, in out of the way places where immediate renewal or provision was impossible, account for many of these omissions. The remainder are to be attributed to failure on the part of a few medical officers to carry out their instructions. The 612 officers shown as unfit for flying duties were all actually on duty, and the great proportion fit for general service at home and abroad. Complete particulars were received in respect of 556 of these 612 officers. The physical defects of this group of 556 are shown in Table XXIII.

Of the 556 unfit for full flying, 510 were fit for general service at home and abroad, and 46 fit for home service only. Table XXIII. shows the reasons for this unfitness. The letters "D.P.E." stand for "defective physical efficiency," which, alone or combined with other reasons, accounted for 201 cases. Defective vision alone, or combined with other reasons, accounted for 208 cases.

TABLE XXII.—PHYSICAL ASSESSMENT IN RESPECT OF FLYING DUTIES OF 2,641 OFFICERS.

Branch.	At Home.				Abroad.				Total.			
	Fit full flying.	Unfit full flying.	Total.	Percentage fit full flying.	Fit full flying.	Unfit full flying.	Total.	Percentage fit full flying.	Fit full flying.	Unfit full flying.	Total.	Percentage fit full flying.
General Duties	1,258	259	1,517	83	528	88	616	86	1,786	347	2,133	84
Chaplains	10	14	24	42	4	—	4		14	14	28	50
Dental, Stores, &c.	133	167	300	44	29	36	65	55	162	203	365	44
Medical	47	40	87	54	20	8	28		67	48	115	59
				46								48
Total non-general duties.	190	221	411	46	53	44	97	55	243	265	508	
Total	1,448	480	1,928	75	581	132	713	82	2,029	612	2,641	77

TABLE XXIII.—REASONS FOR UNFITNESS OF 556 OFFICERS FOR FLYING DUTIES.

Defect.	General Duties Branch.	Other Branches.	Total.
Eyes	84	91	175
Ears or teeth	6	2	8
Medical	91	44	135
Surgical	29	8	37
D.P.E.	75	68	143
D.P.E. and eyes	9	24	33
D.P.E. and ears or teeth	2	3	5
D.P.E. and medical	9	8	17
D.P.E. and surgical	3	—	3
Totals	308	248	556

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3. Details of the physical efficiency of the officers of the general duties branch, the essential function of which is flying, who were found to be fit for flying duties at the date of the examination, are given in Tables XXIV. and XXV. The tests at home were performed during November and December. Abroad, officers in Iraq, Egypt and Palestine were examined from August —October, *i.e.*, towards the end of the hot weather. In India, however, the examinations were made mostly in December, during the cold weather, with the result that their figures approximate more closely to those of officers at home than to those of officers in the other commands abroad. In respect of the officers of this branch, 1,786 cards were received of which 1,583 were complete. Table XXIV. gives the average response of this group of 1,583 to the various tests capable of numerical expression, grouped by ages at home and overseas. Points of interest are :—

(i) the close relationship between the figures shown and the pre-existing standards based on war conditions;

(ii) the deterioration of respiratory efficiency in officers over 30, which is slightly more marked abroad than at home;

(iii) the low systolic pressure of officers over 30, which, contrary to expectation, is no higher than that of the other two age groups;

(iv) the slower pulse rates and lower systolic and pulse pressures in all groups abroad compared with those at home.

It will be observed that the hours flown during the twelve months prior to the examination are greater abroad that at home, and, as might be expected, the members of the oldest age group flew the least number of hours. Table XXV. shows the results of the various tests grouped in accordance with the number of hours flown during the twelve months previous to the examination. The salient points of the table are :—

(i) Officers who have not flown, among whom are included those who flew less than five hours during the year, are physically the least efficient.

(ii) At home, there is no sign of physical deterioration produced by peace-time flying, irrespective of the amount flown during the year. Abroad, however, the group who averaged 195 hours during the year show a very slight, though definite deterioration, more marked, if the figures from India are deducted. It is impossible to say how much of this is due to adverse climatic conditions, and how much to flying over mountainous and hostile country, as in India and Iraq; but the fact remains that the slight difference shown cannot be regarded as in any way unfitting the pilots of this group from flying duty.

(iii) The groups who flew the most, both at home and abroad, are the youngest. They are also the heaviest

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although Table XXIV. shows that weight increases with age. This bears out the impression previously held that flying endurance, in addition to being associated with a high degree of physical fitness, is also helped by youth and a certain degree of body bulk.

Table XXVI. gives details of the response to tests, other than those already dealt with, of officers fit and unfit for full flying duties. Interesting points, among others, are—

(i) The high percentage showing some form of tremor, even among the "fit" group.

(ii) The comparatively large numbers wearing dentures.

(iii) The small percentage among the "fit" group with pyorrhœa. During the war there was an impression that the pilot was particularly prone to this disease, and this was attributed mainly to high flying.

Considerably more attention is now given to dental treatment than during the war, consequently the relation, if any, between flying and pyorrhœa is still unsettled.

TABLE XXIV.—AVERAGE RESULTS OF TESTS OF 1583 OFFICERS OF THE GENERAL DUTIES BRANCH, FIT FOR FLYING DUTIES, CLASSIFIED IN AGE GROUPS AT HOME AND ABROAD.

—	Age group.	No. examined.	Age.	Hours flown per head.		Weight.	Time Breath held.	Expiratory force.	40 mm. Hg. test.	Pulse rate per minute.			Time taken to return to normal.	Systolic pressure.	Pulse pressure.
				Total.	During year.					Sitting.	Standing.	After exercise.			
	Yrs.	No.	Yrs	No.	No.	Kilos.	Secs.	mm. Hg.	Secs.				Secs.	mm. Hg.	mm. Hg.
At home	under 25	360	22·2	510	55	66·7	71·9	138·3	52·9	73·6	86·8	100·5	22·9	122·7	43·1
	25–30	456	27·3	830	55	67·5	68·4	135·6	52·2	73·6	86·8	100·4	22·6	122·4	42·2
	30 & over	321	35·0	600	20	69·6	65·1	134·2	47·5	74·8	87·7	101·4	23·3	122·4	41·3
		1,137	27·9	660	45	67·8	68·6	136·0	51·0	74·0	87·0	100·7	22·9	122·5	42·2
Abroad	under 25	157	22·6	600	80	66·3	67·2	131·0	50·0	70·9	84·4	97·4	22·8	117·4	38·6
	25–30	207	26·9	880	75	68·4	70·8	127·0	51·0	70·7	84·3	97·7	24·4	118·4	39·3
	30 & over.	82	34·3	690	45	68·7	62·8	120·8	46·4	71·6	84·4	96·2	24·4	119·8	39·6
		446	26·7	750	70	67·9	68·0	127·2	49·6	70·9	84·3	97·3	23·9	118·2	39·1
Total	-	1,583	27·5	690	50	67·8	68·4	133·6	50·6	73·1	86·2	99·8	23·2	121·3	41·3
Pre-existing Standards based on war conditions.							70	110	52	72	84	96–108	under 30	120	40

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TABLE XXV.—AVERAGE RESULTS OF TESTS OF 1,583 OFFICERS OF THE GENERAL DUTIES BRANCH, FIT FOR FLYING DUTIES, GROUPED ACCORDING TO HOURS FLOWN, DURING THE 12 MONTHS PREVIOUS TO EXAMINATION.

	Hours flown during year.	No. examined.	Weight.	Age.	Time Breath held.	Expiratory force.	40 mm. Hg. test.	Pulse rate per minute.			Time taken to return to normal.	Systolic Pressure.	Pulse Pressure.	Average number of hours flown per head.	
								Sitting.	Standing.	After exercise.				During year.	Total.
			Kilos.	Years.	Secs.	mm.Hg.	Secs.				Secs.	mm. Hg.	mm. Hg.		Hrs.
At home	0	363	67·6	30·4	66·0	133·0	47·8	75·4	89·1	103·0	24·3	121·0	41·1	0	480
	5–45	374	67·5	26·8	68·7	135·0	52·0	74·1	86·5	100·4	22·1	123·2	42·6	25	610
	45–85	199	67·6	26·9	71·6	137·3	53·6	72·5	84·8	98·8	22·8	122·7	43·2	60	760
	85–125	105	68·7	26·5	67·0	138·8	52·9	72·7	85·1	98·9	21·2	122·8	42·0	105	920
	over 125	96	69·2	25·8	73·3	146·3	53·0	72·4	86·2	99·1	22·7	124·2	43·0	190	1,160
		1,137	67·8	27·9	68·6	136·0	51·0	74·0	87·0	100·7	22·9	122·5	42·2	45	660
Abroad	0	44	68·4	30·1	56·3	120·4	46·2	76·0	90·4	102·8	24·8	118·0	39·4	0	370
	5–45	136	67·2	27·2	67·4	128·7	49·7	70·5	83·6	96·3	23·9	119·0	39·6	25	670
	45–85	129	67·6	26·2	67·9	125·3	49·9	70·1	84·0	97·5	24·3	118·0	39·8	65	770
	85–125	68	68·0	25·9	74·5	133·3	52·2	69·2	82·8	96·1	23·4	116·6	37·4	105	770
	over 125	69	68·3	25·5	70·6	126·4	49·9	71·6	84·0	96·9	22·7	118·7	38·4	195	1,070
		446	67·7	26·7	68·0	127·2	49·6	70·9	84·3	97·3	23·9	118·2	39·1	70	750
Total	- -	1,583	67·8	27·5	68·4	133·6	50·6	73·1	86·2	99·8	23·2	121·3	41·3	50	690

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TABLE XXVI.—AVERAGE RESULTS OF FURTHER TESTS OF 2,359 OFFICERS.

Test.	Officers fit for Flying Duties (1,803).			Officers unfit for Flying Duties (556).			Total (2,359).		
	Numbers.	Percentage.		Numbers.	Percentage.		Numbers.	Percentage of Total.	
Tremor.									
Absent in eyes and hands	1,050	58·2		251	45·1		1,301	55·2	
Present in eyes or hands	546		30·3	187		33·6	733		31·1
Present in eyes and hands	207		11·5	118		21·3	325		13·7
Self-Balancing.									
Steady	1,547	85·8		350	63·0		1,897	80·4	
Unsteady	256		14·2	206		37·0	462		19·6
Knee Jerks.									
Normal	1,406	78·0		400	71·9		1,806	76·6	
Abnormal	397		22·0	156		28·1	553		23·4
Vision.									
6/6 both eyes	1,642	91·1		282	50·7		1,924	81·6	
6/9 and 6/6; 6/9 and 6/9	106		5·9	63		11·3	169		7·2
Over 6/9 in either	55		3·0	211		38·0	266		11·2
Nasopharynx.									
Normal	1,690	93·7		511	91·9		2,201	93·3	
Abnormal	113		6·3	45		8·1	158		6·7
Teeth.									
No Denture :									
No treatment required	1,245	69·1		298	53·6		1,543	65·4	
Treatment required	332		18·4	129		23·2	461		19·5
Denture :									
No treatment required	200		11·1	118		21·2	318	13·5	
Treatment required	26		1·4	11		2·0	37		1·6
Pyorrhœa.									
Absent	1,763	97·8		519	93·4		2,282	96·8	
Present	40		2·2	37		6·6	77		3·2

Section III.—Revised Nomenclature of Functional Nervous Disorders.

1. The modern concept of functional nervous disorders has rendered it essential that a revised and amplified nomenclature be used to designate certain groups of symptoms exhibited by patients suffering from these disorders. The only three available diagnoses in the official Nomenclature of Diseases are hysteria, neurasthenia, and psychasthenia. These terms have served their purpose in the past, but modern psychological research has resulted in the exposure of a wealth of hitherto unsuspected material which has revolutionised all pre-existing ideas on the

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source of origin of functional nervous diseases. The vast amount of research on this subject in recent years has naturally resulted in a fresh nomenclature, the terms of which have frequently a different significance according to the views held by their respective sponsors. At the same time it is almost universally admitted that the old terms hysteria and neurasthenia, although too comprehensive for modern diagnosis, should still be retained for certain groups of symptoms. New terms, however, are necessary, in addition, to designate those groups of symptoms which are excluded by this limitation of the terms neurasthenia and hysteria. As a consequence the following nomenclature has been adopted for the various manifestations of functional nervous disorders in accordance with their more obvious characters.

2.—(i) The term *psychosis* is confined to the diseases grouped together under the term "Mental Diseases" in the official Nomenclature with the partial exception of *psychasthenia* (iii.). In other words, this term corresponds to the ordinary conception of insanity, the certification of which is mainly dependent on the degree of anti-social tendencies exhibited by the patient.

(ii) The term *psycho-neurosis* is used to designate other disorders of function which are purely psychic in origin.

(iii) The term *psychasthenia* is restricted to the clinical entity originally described by Janet, of which the main characteristics are volitional defects, and the presence of obsessional ideas or impulses. Where the latter are of an anti-social nature, psychasthenia may fall under the heading of a psychosis, otherwise it can be regarded as belonging to the psycho-neurotic group.

(iv) The *psycho-neuroses* are sub-classified as follows :—

(*a*) The term *Hysteria* is reserved for the group of cases characterised by manifestations of either a psychic or somatic character, or a combination of both.

In the former the symptoms encountered will be amnesias, somnambulisms, automatisms, fugues, or "Fits"; in the latter gross functional disturbances of the sensorimotor system, such as functional anæsthesias of the special senses and common sensation, *e.g.*, hysterical amaurosis and deafness, and functional paralyses, pareses and contractures, including aphonia, mutism and astasia-abasia.

The groups formerly classified as *suggestion neurosis* and *conversion hysteria* will fall under the heading hysteria.

(*b*) The term *Neurasthenia* is confined to cases characterised by symptoms of mental and physical fatigue accompanied by vague physical discomfort, pain such as headaches, digestive disturbances, &c.

(*c*) The term *Anxiety Neurosis* is confined to cases exhibiting such psychic symptoms as "nervousness," depression, insomnia, nightmares and emotional instability accompanied by mild disturbances of intellectual function

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such as lack of concentration and defective memory, with or without tremor and tachycardia. Many of these cases would formerly have been classed as neurasthenia.

(*d*) The term "*Border-line*" case is reserved for cases showing similar symptoms as those of anxiety neurosis, in which the intellectual functions are so impaired that the patient is becoming incapable of properly managing himself or his affairs.

3. It is realised that there is no hard and fast line of demarcation between these various groups, and cases will occur whose symptoms may be common to more than one of the groups outlined, but it is considered that this scheme provides a means of more satisfactory classification than that hitherto provided. At the same time it is desired to emphasise the fact that no scientific classification of these nervous diseases is as yet possible in the absence of any exact knowledge of the pathological processes involved. The classification arranged above is artificial, and is presented in order to fulfil purely clinical requirements.

4. The total number of cases among officers during the year was 59, as compared with 86 during 1920. Twenty of these occurred abroad and 39 at home. This shows a relatively higher incidence among officers abroad. Of the 20 cases occurring abroad, 14 were invalided home, and one was eventually invalided from the service. Of the 39 cases at home, four were invalided from the service. The type of psychoneurosis most commonly encountered is the anxiety-neurosis, of which there were 41 cases. Investigation into the causation of these cases of psychoneurosis revealed in most instances the existence of a complex of factors entering into the elaboration of the disease. Generally speaking anxiety-neurosis is associated with flying stress; and neurasthenia, with duties entailing administrative responsibility, entailing long office hours and consequent diminished opportunity for physical exercise.

5. The existence of anxiety-neurosis among officers engaged in flying duties is to be expected and may be explained by consideration of the mechanism involved. Aerial activity demands adaptation to an environment only recently exploited, for which therefore no preformed adaptations can exist. Their acquirement depends upon an inherent flexibility for making and maintaining suitable adaptations to deal with events arising in this environment. The primitive instinct liable to stimulation under these circumstances is that of self-preservation. The suppression of any disturbing tendencies and emotions liable to be aroused is a primary necessity. This process normally takes place involuntarily. Its failure apparently is liable to occur from two causes :—

(i) The stimulation of the self-preservative instinct into violent activity by some terrifying incident, *e.g.*, crash, or by the summation of similar stimuli of less degree.

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In some cases this process may be re-inforced by the prevalent activity of other instinctive tendencies.

(ii) A weakness of the higher controlling forces—either innate or acquired, the latter being in many cases associated with toxæmic states.

In either event the result is the same—promptings which arise from the instinct of self-preservation break through into consciousness. A conscious conflict is established between these tendencies and the ideas of duty and self-respect, which, remaining unsolved, precipitates a nervous illness. The association of anxiety states with the emotion of fear was clearly demonstrated in cases of "Shell Shock" and the mechanism here involved is apparently identical. This conclusion is only presented provisionally, the clinical details available and the number of cases being insufficient to warrant, as yet, any more definite statement.

Section IV.—Medical Examination of Recruits.

The physical standards of recruits for the Royal Air Force remain unaltered and are described in detail in the report of the health of the Royal Air Force for 1920.

At the beginning of the year recruiting depôts were open at :—

Aberdeen.	Belfast.	Birmingham.
Bournemouth.	Bradford.	Brighton.
Bristol.	Cardiff.	Chatham.
Chelmsford.	Dublin.	Edinburgh.
Glasgow.	Hereford.	Huddersfield.
Hull.	Leeds.	Leicester.
Liverpool.	London.	Manchester.
Middlesbrough.	Newcastle.	Nottingham.
Norwich.	Plymouth.	Portsmouth.
Reading.	Sheffield.	Southampton.
Wolverhampton.	Woolwich.	Worcester.

The total number of recruits accepted during 1921 was 7,258, of which 810 boys were admitted to Halton and Cranwell.

Table XXVII. shows the average physique classified by trade.

Table XXVIII. gives the average physique and ages classified by age.

Table XXIX. shows the average physique and ages grouped under geographical areas of residence.

Figures for 1920 are shown in italics in the three tables.

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TABLE XXVII.—ACCEPTED RECRUITS 1921 AND 1920.

Average Physical Measurements and Ages classified by Occupation.

Previous Occupation.	No.	Height.	Weight.	Chest.			Age.
				Max.	Min.	Range.	
		ft.	lbs.	Ins.	Ins.	Ins.	Yrs.
1. Building trades and electricians	833	5·51	127·6	35·4	33·0	2·4	20·4
	402	*5·5*	*129·9*	*35·1*	*32·6*	*2·5*	*21·4*
2. Clerks	565	5·57	128·6	35·5	32·9	2·6	20·9
	397	*5·5*	*129·2*	*34·9*	*32·3*	*2·6*	*20·9*
3. Commercial, public and personal services	480	5·53	129·5	35·6	33·1	2·5	21·6
	498	*5·5*	*130·0*	*35·0*	*32·5*	*2·5*	*22·4*
4. Metal workers	1,770	5·50	126·0	35·3	32·8	2·5	20·1
	694	*5·5*	*127·6*	*34·7*	*32·2*	*2·5*	*20·2*
5. Schoolboys	782	5·37	109·4	32·0	29·6	2·4	15·4
	371	*5·3*	*108·8*	*31·2*	*28·5*	*2·7*	*15·4*
6. Transport and Communications	935	5·51	129·4	35·7	33·1	2·6	20·8
	623	*5·5*	*132·6*	*35·4*	*32·8*	*2·6*	*20·9*
7. Indoor trades (other than above)	690	5·48	126·9	35·3	32·8	2·5	20·8
	516	*5·5*	*130·0*	*35·1*	*32·6*	*2·5*	*21·6*
8. Outdoor trades (other than above)	1,128	5·46	126·8	35·5	33·0	2·5	20·4
	502	*5·5*	*130·3*	*35·2*	*32·6*	*2·5*	*20·7*
9. Unstated	75	5·54	129·3	35·3	32·5	2·8	20·5
	436	*5·4*	*126·8*	*34·8*	*32·1*	*2·6*	*21·3*
Total	7,258	5·49	125·5	35·1	32·5	2·6	20·1
	4,439	*5·5*	*127·9*	*34·7*	*32·1*	*2·6*	*20·6*

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TABLE XXVIII.—ACCEPTED RECRUITS 1921 AND 1920.
Average Physical Measurements classified by Age.

Age last Birthday.	Total.	Height. Ft.	Weight. Lbs.	Chest. Max. Ins.	Chest. Min. Ins.	Chest. Range. Ins.
15,16,17	810	5·37	109·6	32·1	29·7	2·4
	497	*5·4*	*109·7*	*31·4*	*28·8*	*2·7*
18 -	2,260	5·50	123·9	34·9	32·4	2·5
	1,184	*5·5*	*125·0*	*34·4*	*31·9*	*2·5*
19 -	1,264	5·50	126·1	35·2	32·7	2·5
	731	*5·5*	*128·0*	*34·8*	*32·3*	*2·5*
20 -	793	5·51	128·2	35·6	33·0	2·6
	432	*5·5*	*130·0*	*35·2*	*32·6*	*2·5*
21 -	495	5·48	128·2	35·7	33·0	2·7
	330	*5·5*	*132·5*	*35·5*	*32·9*	*2·6*
22 -	378	5·51	129·6	35·8	33·2	2·6
	231	*5·5*	*132·9*	*35·4*	*32·8*	*2·6*
23 -	229	5·53	132·1	36·1	33·5	2·6
	186	*5·5*	*132·2*	*35·4*	*32·9*	*2·5*
24 -	193	5·51	131·5	36·1	33·5	2·6
	156	*5·5*	*133·3*	*35·6*	*33·0*	*2·6*
25 -	145	5·50	131·6	36·1	33·5	2·6
	127	*5·5*	*135·0*	*35·6*	*33·1*	*2·5*
26 -	185	5·49	132·2	36·3	33·8	2·5
	100	*5·5*	*137·5*	*36·1*	*33·5*	*2·6*
27 & over -	506	5·51	137·1	36·2	33·7	2·5
	465	*5·5*	*139·2*	*36·4*	*33·8*	*2·6*
Total -	7,258	5·49	125·5	35·1	32·5	2·6
	4,439	*5·5*	*127·9*	*34·7*	*32·1*	*2·6*

TABLE XXIX.—ACCEPTED RECRUITS 1921 AND 1920.
Average Physical Measurements and Ages classified by geographical areas of Residence.

Locality.	No.	Age.	Weight. Lbs.	Height. Ft.	Chest. Max. Ins.	Chest. Min. Ins.	Chest. Range. Ins.
London - - -	1021	20·1	126·4	5·50	35·3	32·7	2·6
	1063	*20·7*	*127·8*	*5·5*	*34·9*	*32·3*	*2·6*
Scotland - - -	574	20·5	126·5	5·45	35·4	32·8	2·6
	502	*21·3*	*128·9*	*5·4*	*35·0*	*32·3*	*2·7*
Ireland, Wales and	1289	19·7	124·6	5·48	34·5	32·1	2·4
West of England -	*796*	*20·6*	*128·4*	*5·5*	*34·4*	*31·9*	*2·5*
N.E., N.W., & N. of	1485	20·3	124·7	5·45	35·2	32·6	2·6
England - -	*679*	*20·6*	*127·9*	*5·5*	*34·8*	*32·3*	*2·5*
E. & S.E. England -	1886	19·8	125·8	5·51	34·9	32·4	2·5
	932	*20·3*	*127·5*	*5·5*	*34·4*	*31·9*	*2·5*
Midlands - - -	993	20·2	125·7	5·49	35·5	33·0	2·5
	467	*20·5*	*126·7*	*5·5*	*34·9*	*32·2*	*2·6*
Unstated - - -	10	21·1	134·9	5·66	36·0	33·1	2·9
Total - -	7258	20·1	125·5	5·49	35·1	32·5	2·6
	4439	*20·6*	*127·9*	*5·5*	*34·7*	*32·1*	*2·6*

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Section V.—Hygiene and Sanitation.

United Kingdom.

1. There has been progressive improvement both in the sanitary conditions of stations and in the comfort and health of personnel during 1921. This is in great measure due to the greatly improved housing conditions, instruction to officers and men in hygiene and sanitation, better organisation of unit sanitary detachments, and systematic and frequent inspection by medical and sanitary officers.

2. *Lectures and Courses.*—Lectures delivered to cadets at Cranwell have covered a wide field of sanitation, and the papers submitted have shown that the subject in its general aspect was understood and appreciated. Eighty-five candidates were examined and all obtained pass marks. A set of lantern slides obtained through the War Office proved invaluable for instructional purposes and were used both at Cranwell and Halton. Courses at the Army Schools of Hygiene at Netley, Strensall, and Carrickfergus, for other than medical personnel were well attended. Twenty-five officers and 50 other ranks obtained pass marks. The Courses at the Army School of Hygiene at Blackpool were attended by medical orderlies for qualification as sanitary orderlies. Twelve qualified out of a total of fourteen. Opportunity, whenever possible, was also given for medical officers to undergo special courses in hygiene and tropical medicine at the same school before proceeding abroad. Lectures on the more important points of tropical hygiene were given to all drafts before leaving the United Kingdom.

3. *Liaison with other Services and Civil Authorities.*—This has continued to prove of the utmost value. Accommodation of cases of infectious disease, analyses of food, water and sewage, bacteriological examinations, facilities for examining water supplies not under R.A.F. control, and destruction of rats, are instances. The more important conferences and committees dealing with public health were attended by representatives of the R.A.F. medical service. The London School of Tropical Medicine was given facilities to commence an entomological survey at Halton, where it was considered that much useful material could be obtained.

4. *Accommodation.*—No new stations have been opened. Coal Aston, Kingsnorth, Stonehenge and Howden have been closed down, and others reduced to care and maintenance bases. As stated in the previous report, the accommodation provided is semi-permanent; consequently the major works carried out during the year have been towards the reconditioning of existing buildings, increasing recreational facilities, and providing married quarters for all ranks. Improvements effected have resulted in buildings which should remain suitable for several years. Reconditioning consisted of repairing, rendering, thickening and

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making damp-proof all walls; reflooring or covering floors with linoleum; improving windows; adding night closets to hutments; improving heating arrangements; providing lockers and racks for personal effects; all tending to make the barrack rooms drier and more comfortable. Improvements on these lines have been carried out to the living quarters at practically all stations. Married quarters, by conversion of existing buildings or erection of new ones, have been generally commenced, and some completed. Messes, guard rooms, latrines, ablution rooms, heating arrangements for workshops, covers for water tanks, &c., have been improved, or supplied where necessary. The erection of new buildings on a large scale has been confined to the barracks at Halton and a permanent sick quarters at Netheravon. Sick quarters at other stations have been altered so as to meet the requirements laid down in the R.A.F. building synopsis. Surface drainage at Duxford, Shotwick and Uxbridge has been improved. At Gosport the dampness of some of the living rooms in the Fort has been mitigated by better ventilation, but the earth-covered roofs are still a drawback.

5. *Conservancy.*—At Netheravon a complete installation of sewage disposal on modern lines was completed during the year. The earth closets at Calshot were entirely abolished. At the Isle of Grain the low-level portion of the station is still served by buckets, this system having worked sufficiently well there to warrant the postponement of a more expensive method. A change in the method of dealing with the sludge at Halton has been effected so as to preclude all possibility of stream pollution. At Uxbridge detritus arrangements at the ejector caused a temporary nuisance. Improvements were effected by allowing a greater proportion of the lighter solids to pass through the ejector. Very complete analyses of sewage effluents were carried out during the year, and with the exception of those at Digby and Flowerdown showed excellent results. The analyses in these two stations had the effect of bringing to light mechanical and operational defects. Refuse disposal has on the whole been satisfactorily carried out. Unit sanitary detachments provided for at each station have carried out their work on the whole with greater satisfaction. Responsible officers, however, have not always made the best use of the men trained at the Army Schools of hygiene. These men are an essential part of any unit, and their constant changing can only result in unsatisfactory unit sanitation.

6. *Recreational Facilities* have been greatly improved, and most stations are provided with football and other sports grounds, tennis and squash courts and gymnasia. Every airman participates in both outdoor and indoor sports and recreations, as an essential part of his training.

7. *Water Supplies.*—The position created by the prolonged drought led to the need of husbanding and safeguarding water

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supplies, and as a consequence analyses were made more frequently. Those supplied from outside sources were analysed and found to be satisfactory except at Spittlegate. The water here is supplied from a shallow well boring near the River Witham. Repeated analyses have proved it to be unsatisfactory, probably due to the rapidity with which the well can be pumped dry, and then refilled almost direct from the river, without effective natural filtration occurring. Negotiations to bring the Grantham supply to the camp have been initiated. At Harlescott the supply was reported to be unpalatable, and on examination the cause was found to be due to a tank cover support, which had been treated with solignum. Station wells showed a considerable variation in purity. The valley bore at Upavon has almost consistently given suspicious results. The site of the well is close to an old prisoners' of war camp where much pollution of soil had occurred. The rains after the drought may possibly have conveyed some of this surface and subsoil pollution to the well. Chlorination of this supply has been carried out, and a change in the supply may later be found necessary Analyses of the hill bore, and the well supplying the married quarters at this station, have been entirely satisfactory. At Howden the analyses were also unsatisfactory, but differed little from the original analysis made when the well was sunk. The Isle of Grain supply again showed a high ammonia content as well as the constant high chlorine figure primarily due to the proximity of the sea.

8. *Flies.*—This problem was attacked in early spring before breeding commenced. The attempts to destroy all possible breeding places in or near stations met with considerable success, in spite of the summer weather proving exceptionally long and hot, and successive swarms of flies continuing for longer than usual. All food supplies were gauzed, and fly poisons and traps were extensively in use.

9. *Rats.*—The anti-rat bait supplied to stations by the Ministry of Agriculture and Fisheries proved of the greatest value. At all stations two well-organised campaigns, in co-operation with the civil authorities, were carried out during the year, and resulted in a considerable number of rats being destroyed. Generally the presence of rats in numbers was not reported from any station.

10. *Disinfection.*—At Uxbridge Depôt the blankets and clothing issued to recruits are thoroughly disinfected after being used by previous recruits, and before being stored. Additional disinfectors of the Velox type A have been ordered for Leuchars, Isle of Grain, Andover, Gosport, Kenley, Spittlegate, Shotwick and Bircham Newton.

11. *Food and Cooking.*—The new ration scales have been adequate, and the quality, with few exceptions, excellent. Endeavours were made to ensure a greater variation in the meat

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rations by substituting mutton for beef twice weekly. Although there has been a steady improvement in the cooking and serving of the food, they still leave much to be desired. Facilities for the better instruction of cooks are being made available by establishing a school of cookery at Halton. Enamel plates are still in use. The provision of aluminium ware was reported on during the year, and strongly recommended. The general and detailed arrangements for messing have greatly benefited by the appointment of an inspector of messing.

Egypt and Palestine.

1. The principal stations are located at Cairo, Abbassia, Almaza, Heliopolis and Helwan, in the Egyptian Group, and at Abu-Sueir, Suez, Kantara, Moascar (Ismailia), Ramleh, and Amman (Trans-Jordania) in the Palestine Group. Twelve drafts comprising a total of 577 personnel were despatched from the United Kingdom during the year. Arrangements were completed for the treatment of airmen's families in civil and military hospitals, and plans for the conversion of a suitable building into a R.A.F. general hospital at Aboukir, if required, have been approved. Instruction of medical personnel at army schools of hygiene has been carried out, and lectures were delivered to units on venereal disease and tropical hygiene in general. Sanitary work at stations has been carried out by natives supervised by R.A.F. personnel. A sanitary committee was formed at headquarters in order to ensure co-ordination in dealing with questions of hygienic importance, and to secure priority for the most urgent works. Accommodation for personnel, owing to the uncertainty of future requirements, was varied, consisting of semi-permanent stone and brick hutments, wooden huts, European pattern, and bell tents; this temporary accommodation has not been conducive to the best sanitation. Sometimes hired buildings were occupied. Married quarters, usually converted sheds or spare buildings, were available at some stations, but were lacking in comfort, and usually uncomfortably hot in summer. Bathing, cooking, lighting and other conveniences in these quarters were as a rule poor. Care and maintenance of quarters in general have consequently not been an easy matter, and re-conditioning and repair work was continually required. At Abu-Sueir and Ramleh the construction of permanent type buildings was commenced.

2. *Water Supplies.*—Stations near Cairo are supplied by the Cairo Corporation with good water. Helwan receives drinking water from Cairo by rail transport, while the supply of ablution water is obtained from the Helwan town supply. Aboukir is supplied from the sweet water (Nile) canal, which is purified by the chlorine-filtration method. This method is also used at Moascar, the water coming from a canal at Nefichi. During the summer months the supply at Aboukir caused trouble, owing

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to the large quantity of mud held in suspension, over-taxing the filter beds. Abu-Sueir and Ramleh are both supplied by shallow wells, and chlorination is consequently required. Analyses of water carried out during the year proved fairly satisfactory. While no outbreaks of disease could be attributed directly to any water supply, suspicion was directed to that at Aboukir, when several cases of typhoid occurred in September. Covers are being gradually provided for all tanks.

3. *Bathing and Ablution.*—Gradual improvement is being effected in the supply of hot water.

4. *Sewage.*—Water-carriage systems are installed at stations near Cairo. At Aboukir the officers' quarters only, have water-closets. At all other stations the pail system is used, excreta being either incinerated or carted. Native latrines, as usual, have been the most unsatisfactory.

5. *Surface Drainage and Sullage Water.*—The surface drainage is as a rule not sufficient to cope with the occasional heavy rains. Sump pits, from which percolation and absorption is slow, have been unsatisfactory. Routine disinfection has been carried out through the civil and military authorities, but additional facilities are also required. Velox disinfectors were ordered, for delivery early in 1922, and will be issued to Aboukir, Heliopolis, Abu-Sueir and Ramleh.

Mediterranean Group.

1. Calafrana (Malta) is the principal station, the group headquarters being at Valetta. Detachments were located at Feneraki, near Constantinople, and at Alexandria. The last named was disbanded early in the year. R.A.F. personnel on H.M.S. " Pegasus " also comes under this group.

2. Five drafts, comprising a total strength of 56 men, were sent out from the United Kingdom during the year.

3. Calafrana station is sited on high ground of rock and sand close to the Sirocco Bay on the south-east of the island. Accommodation is provided for 400 men in good barrack huts-ments. Many improvements and erections of new buildings have been carried out during the year. The suitability and state of quarters are very satisfactory, being provided with every convenience, ample ablution and bathing arrangements, water-carriage latrines connected to an outfall to the sea, and excellent messing and recreation accommodation. A new officers' mess has been built.

4. Water is supplied from the civil reservoir, but is described as of poor quality and necessitating chlorination before use.

5. Temporary sick quarters to replace the inadequate and insanitary buildings formerly used have been provided by the conversion of one of the barrack huts.

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Iraq.

1. The majority of the personnel of the Baghdad area were stationed at the aerodrome on the right bank of the river (Baghdad West). The new aerodrome at Hinaidi, on the left bank of the river, ten miles south of Baghdad, was partly occupied during the year, and all squadrons in the Baghdad area will be stationed here before the end of the present year. Sites both at Baghdad and Hinaidi are on alluvial soil, the cantonments at the latter being situated on open desert. The station at Mosul, 230 miles north of Baghdad, is close to the river on the right bank and three-quarters of a mile from the town of Mosul. The climate here is much colder in winter, and although nearly as hot in the heat of the day as Baghdad, has the advantage of cooler nights during the hot weather. The station at Shaibah is in open desert fifteen miles from Basrah. The stores depôt is on the river bank at Mahgil, south of Basrah.

2. *Accommodation.*—Apart from Mosul, where poor quality marble, and sandstone are readily available for building purposes, quarters, of necessity, consist of native brick, which may be either sun-dried or burnt, the latter being preferable in view of its more lasting qualities. Thick roofs, diminished window space, verandahs, cement floors, and smoothly finished walls both outside and in, to avoid harbouring sand-flies, are the minimum requirements of adequate quarters in the country. Those at Shaibah (burnt brick), Mosul (stone) meet these requirements, but elsewhere mostly sun-dried brick has been employed. Cracks in the walls both inside and out are numerous, verandahs are frequently lacking and floors merely consist of earth. European pattern tents, and native buildings for billets, were also utilised. Electric lighting is used generally and fans are provided in all quarters. There are no married quarters available. Heating in winter is chiefly by oil stoves; fireplaces are provided in some huts. The buildings are spaced wide apart, and sited so as to avoid facing the sun at its hottest. Much building work has been done during the year, more especially at Hinaidi, where the accommodation is entirely new. Many proposals for major works which would improve sanitary conditions have been submitted, but these can only be carried into effect concurrently with the building operations.

3. *Water Supply.*—Water for Baghdad and Hinaidi is supplied by modern chlorine-filtration plants, from the Tigris. The supply at Mosul is only chlorinated without filtration. Supplies proved adequate. At Shaibah the pipe line from the Shatt-el-Arab proved defective, and this, coupled with insufficient storage tanks at the station, rendered the supply inadequate during the summer months. This has since been remedied, but the question of the replacement of the pipe line is still under consideration. Surface wells at Shaibah are undrinkable owing

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to the large proportion of salts present, and this also applies to a deep boring previously made. Weekly analyses were made at Baghdad, Hinaidi and Shaibah pumping stations, and frequent samples taken from end supplies. These proved uniformly satisfactory.

4. *Ice Supply.*—Ample supplies were available at all stations.

5. *Ablution and Baths.*—All stations suffer from inadequate hot water. It is, however, provided whenever possible, the quantity depending chiefly on the fuel supply. Sitz and shower baths are provided.

6. *Conservancy.*—Pail latrines are in general use and excreta disposed of by incineration. Soak pits are the general means available for disposal of urine and sullage water. At some stations irrigation channels are used, and at Hinaidi, brick-lined sumps, from which the contents are pumped daily and carted away.

7. *Cooking.*—Much has been done to improve cooking arrangements, and while the buildings provided are not altogether satisfactory as regards ventilation and flooring, there has been commendable supervision and careful attention paid to the health and cleanliness of the personnel employed.

India.

1. The R.A.F. stations in India are at Ambala, Karachi, Risalpur, Kohat, Peshawar, Lahore, Quetta and Parachinar. With the exception of Parachinar and Quetta, which are hill stations; Kohat, which is situated in a valley amongst the N.W. Frontier hills; Karachi, which is a sea-port, these stations are Punjab plains stations. The climate in all these stations is that of Northern India, cold and dry in the cold weather, hot, dry and dusty in the hot weather, and hot and steamy in the rains according to the amount of rainfall received, which varies according to the position of the station, the most northerly hardly coming under the influence of the Monsoon at all.

2. All the sites, with the exception of Parachinar, are flat, and on a mixture of sand and clay. Karachi, in the delta of the Indus by the sea, is mainly sand; Quetta is mainly stone, while Kohat and Peshawar are kept green by their numerous irrigation channels. Lower Barian, a typical hill station in the Murree Hills, is used from April to October. A small port detachment is located at Bombay. Tank and Bangalore closed down in April, and during the same month the aircraft depôt left Lahore for Karachi. During October, the squadron stationed at Cawnpore was moved to Peshawar and the squadrons at Ambala and Kohat interchanged. The move from Lahore to Karachi across the Sind desert during the hot weather is worthy of special mention. To avoid delay and prolonged stops at unexpected intervals, and to ensure the maximum of comfort and

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minimum of fatigue, the men were sent by special train on a carefully arranged time-table. The medical arrangements were very complete, and with fans, ice, soda-water, good feeding arrangements and excellent accommodation, the journey was completed successfully and without mishap.

3. Nine drafts comprising a total strength of approximately 500 all ranks were sent from the United Kingdom during the year.

4. It cannot be said that the health figures for India are satisfactory. Important contributory factors are the inexperience of both officers and men in the precautions and sanitary measures necessary for the preservation of health in the tropics; incomplete realisation of these points; and the presence of men new to tropical climates, living under camp conditions in several of the stations. Long hours of heavy physical work may be a factor in producing susceptibility to ailments in the tropics, and such conditions have been reported from several stations. Units undoubtedly suffered from the lack of trained unit sanitary squads, the provision of which, it is hoped, will be made in time. The natives employed required constant supervision.

5. *Accommodation* varied considerably in type, but on the whole, the suitability and state of quarters as regards ventilation, dryness, flooring and window space were good. Barrack buildings, bungalows, European pattern and bell tents provided the necessary accommodation; the tents nearly always being provided with brick, stone or cement floors, and sometimes raised on platforms and under cover of chuppas (mud and mattings). Fireplaces are, as a rule, available in barrack rooms and bungalows. Special attention has had to be paid to the prevention of overcrowding and defective ventilation. Where barracks were available, *e.g.*, Ambala, Cawnpore, Quetta and Lahore, the general sanitary conditions have been better than elsewhere. Married quarters were not available at all stations, but, where provided, they consisted of bungalows or European pattern tents, the latter consisting of two, three, or four tents for each quarter, with brick flooring and additional small tents for bathrooms, w.c.'s and cookhouses. These make fairly satisfactory quarters.

6. *Water Supplies*, on the whole, were ample and satisfactory, but have required considerable attention to guard against pollution. Chlorination in storage tanks was generally employed. Covers for tanks were available at most stations.

7. *Ablution and bathing* arrangements are provided at all stations, but methods vary. Usually water is laid on to the ablution benches, but occasionally the water has to be taken from taps near by. Hot water is not generally available except by boiling in specially erected boilers, and these are few. Shower baths are in general use, but the bathing arrangements require many important improvements and more careful supervision.

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Drainage of large quantities of waste water has continually presented difficulties. Soak pits, open drain gulleys, and irrigation on to cultivated patches were the methods employed.

8. *Conservancy.*—Local incineration has proved the best method available, but cartage had to be employed at some stations. Inspections often revealed unsatisfactory conditions at the incinerators, such as the surrounding ground being fouled, refuse being dumped indiscriminately, and liquid dejecta being unburnt. Latrines were of the bucket type, and fly-proofed where possible, a supply of cresol being always available, and used freely. There is still room for much improvement in the general cleanliness of latrines, particularly the native ones.

9. *Flies* were unnecessarily numerous, the inevitable result of defective sanitation.

10. *Food supplies* have been good. Food as served to the men seldom left any real cause for complaint. The kitchens at some stations are entirely in the open, of primitive structure and frequently insanitary, while at others, well constructed mud brick buildings have been built. The mode of conveying meat and other rations to camp has been improved by using fly and dust-proof receptacles. Several articles of food as supplied by native canteens and coffee shops have had to be restricted, *e.g.*, salads, fruit and uncooked vegetables. Overalls, soap, nail-brushes and towels were made a special supply to men working in cookhouses, but reports showed that full advantage of these supplies was not taken. The fly-proofing of some of the kitchens has proved unsatisfactory owing to the large mesh of gauze employed.

11. *Disinfection* has not been so thoroughly carried out as was necessary under the conditions prevailing. Owing to lack of disinfectors at stations, facilities for routine steam disinfection were not available. The majority of stations, while being able to carry out disinfection once a year with the help of the Army authorities, had otherwise to rely on exposure to the sun, and washing in cresol.

Section VI.—Vaccination and Inoculation.

1. *Vaccination.*—The procedure described in last year's report has been continued during 1921, viz., that airmen are not compelled on attestation to undergo vaccination against small-pox, but the necessity of their being fully protected is pointed out to them. An exception, however, was considered essential for men recruited from areas where small-pox had assumed considerable proportions. It was insisted that such men be vaccinated immediately after being finally accepted. Special endeavours have been made to protect all drafts proceeding abroad. Fifty-seven drafts comprising a total strength of 1,745 were sent abroad during 1921, all of which were fully

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protected according to R.A.F. requirements, namely, either a record of successful vaccination within two years, or successful vaccination immediately before proceeding abroad. Wives and families accompanying drafts were also fully protected.

2. Recruits admitted during the year numbered 7,258, of whom 5,618 were vaccinated, mainly at Uxbridge, after joining. Boys admitted to Cranwell were allowed greater latitude so as to interfere as little as possible with their early training, but where the exigencies of the service permitted, and when no record of previous vaccination could be obtained, they were vaccinated. Out of a total of 810 admitted, 452 were vaccinated.

3. The general state of vaccination has been satisfactorily maintained, and, as a result, despite the number of cases of small-pox amongst the civil population, no case of small-pox occurred in the Royal Air Force at home.

Table XXX. shows the total number and results of vaccinations during 1921. The high percentage of failures abroad is the most striking feature of the table. This may be due partly to the majority of personnel having been previously vaccinated since joining the Air Force. An additional factor is the rapid deterioration of lymph in the tropics during the hot weather, and the possibility of its production from an attenuated virus. The Government lymph establishment in Iraq produces no lymph for issue during the hot weather, and consequently issues during this period are derived from stocks produced in the spring. Vaccination is considered successful when one or more vesicles are produced. In practice, the greater number vaccinated have three or more vesicles. In the United Kingdom 92·9 per cent. vaccinations (*i.e.*, 7,526) were successful, and three or more vesicles were produced in 77 per cent. of them, two vesicles in 20 per cent., and one vesicle in only 3 per cent.

4. *Inoculations.*—All drafts proceeding abroad were certified, before leaving the United Kingdom, as having received two doses of T.A.B. vaccine within six months of their departure. At home, inoculation by T.A.B., apart from drafts, is not carried out as a routine measure, but during the year 2,290 all ranks were given one dose, and 7,309 two doses, although total drafts abroad did not exceed 1,745. In December, at the commencement of the influenza outbreak over 3,000 inoculations were carried out with influenza vaccine. The vaccine employed was produced at the R.A.F. Central Laboratory, and consisted of a mixture of different strains of *B. Influenzæ*, *Streptococcus*, *B. Pneumoniæ*—each 100 millions, *Pneumococcus* and *Micrococcus Catarrhalis*—each 200 million. The dosage was 1 c.c., repeated in seven days. Abroad, in Egypt, Palestine and Malta, 1,083 inoculations with T.A.B. were reported. In Iraq, there were 608 inoculations with T.A.B., 485 with cholera vaccine, and 75 with plague vaccine. In India, T.A.B. inoculations numbered 1,224, and cholera inoculations 1,532.

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TABLE XXX.—VACCINATION RESULTS DURING 1921.

Area.	Number vaccinated.	Primary Vaccinations.			Re-vaccinations.		
		Successful.	Failed.	Percentage of Failures.	Successful.	Failed.	Percentage of Failures.
United Kingdom - -	8,104	602	42	6·5	6,924	536	7·2
Mediterranean Littoral -	244	44	12	21·4	94	94	50·0
Iraq - - - - - -	322	3	0	—	53	266	83·3
India - - - - -	243	6	1	14·3	171	65	27·5
Total Overseas - -	809	53	13	19·7	318	425	57·2
Grand Total - -	8,913	655	55	7·7	7,242	961	11·7

Section VII.—Summary of Laboratory Work done in R.A.F. Hospitals in the United Kingdom during 1921.

SPECIMENS EXAMINED.

Analyses:—

Fæces - - -	2
Gastric - - -	20
Urine - - -	902
Water - - -	19
Food - - - -	3

Blood:—

Agglutinations - -	109
Counts - - -	1,518
Cultures - - -	161
Malaria Parasites -	1,529
Wassermann Tests -	286

Cerebro-Spinal Fluid for:—

Cell Count - - -	12
Cultures - - -	12
Meningococcus - -	10
Syphilis (Noguchi) -	10
Tubercle bacillus -	2

Discharge for:—

Gonococcus - -	337
Spirochætes - -	25

Fæces for:—

Dysentery - - -	1,149
Enteric Group - -	152
Helminths - - -	277

Pathological Specimens -	34
Purulent Discharges -	77
Peridental Smears - -	32
Septic Fluids - -	48

Sputum:—

General - - -	77
T.B. - - - -	369

Throat Swabs:—

Diphtheria, &c. - -	1,717

Vaccines:—

Preparation of autogenous - - -	130

Preparations in bulk:—

Influenza -	100,000 c.c
Gonococcus -	5,000 c.c.
Staphylococcus	20,000 c.c.
Streptococcus	5,000 c.c.
T.A.B. - -	10,000 c.c.

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Section VIII.—Surgical Operations at Home and Abroad, 1921.

Table XXXI.—Operations, 1922.

Operation.	R.A.F. Sick Quarters.		R.A.F. Hospitals.		Royal Navy Army and other Hospitals.		Totals.	
	Successful.	Failed.	Successful.	Failed.	Successful.	Failed.	Successful.	Failed.
Tumours, cysts and bursæ	5	—	13	—	38	—	56	—
Abscesses	127	—	91	—	106	—	324	—
Ligature of arteries	—	—	—	—	1	—	1	—
Varices	—	—	—	—	1	—	1	—
Removal of nails	8	—	34	—	32	—	74	—
Reduction of fractures	6	1	20	—	10	—	36	1
Wiring or plating fractures	—	—	14	—	9	—	23	—
Removal of plates	—	—	2	—	—	—	2	—
Removal of semi lunar cartilage from knee joints	—	—	9	—	11	—	20	—
Amputations	—	—	14	—	15	—	29	—
On the eye	3	—	6	—	19	—	28	—
Removal of tonsils, adenoids or both	—	—	36	1	22	—	58	1
Submucous resection of nasal septum	—	—	35	—	15	—	50	—
On ear and mastoid process	1	—	1	—	3	1	5	1
For hernia	—	—	37	—	40	1	77	1
Appendicitis	—	—	57	1	93	2	150	3
Other abdominal operations	1	—	7	1	9	2	17	3
Hæmorrhoids	—	—	12	—	23	—	35	—
Circumcision	3	—	14	—	41	—	58	—
Varicocele	—	—	8	—	20	—	28	—
Hydrocele	—	—	2	—	6	—	8	—
All other operations	52	2	70	2	103	1	225	5
Total	206	3	482	5	617	7	1,305	15

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Section IX.—Summary of Dental Treatment in the United Kingdom during 1921.

TABLE XXXII.

	*By R.A.F. Dental Officers. (Average Strength, 10.)	By Army Dental Officers.	By Civilian Dental Surgeons.	Total.	Ratios per 1,000 of Strength.	
					1921 (21,936).	1920 (21,454).
Fillings	7,406	1,760	862	10,028	457·14	545·3
Scalings	1,380	276	178	1,834	83·6	97·1
Extractions	10,284	910	967	12,161	554·4	545·7
Root fillings	933	296	223	1,452	66·2	70·3
Number of dentures supplied	633	35	88	786	35·8	37·8
Number of upper dentures	398	22	56	476	21·7	—
Number of lower dentures	265	13	32	310	14·1	—
Number of patients supplied with dentures	471	25	64	560	25·5	29·5
Number of repairs to dentures	181	24	54	259	11·8	—

* In addition to above, one dental officer was engaged on administrative duties.

Section X.—Royal Air Force Nursing Service.

There were nine cases of sickness among an average strength of 49 during 1921. The average duration of each case was 19·1 days—the actual number of individuals involved being seven. There were two cases of invaliding from the service one for neurasthenia, and the other, the case of fractured skull mentioned in the Health Report of 1920. There were no deaths.

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REPORT

ON THE

HEALTH OF THE ROYAL AIR FORCE

FOR THE YEAR 1922

The following Report on the Health of the Royal Air Force for the Year 1922 is issued for the information and guidance of all concerned.

By Command of the Air Council,

W. Nicholson

AIR MINISTRY.

April, 1924.

LONDON:
PUBLISHED BY HIS MAJESTY'S STATIONERY OFFICE.
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AIR MINISTRY,
KINGSWAY,
LONDON, W.C. 2.

To The Secretary of the Air Council.

SIR,

I HAVE the honour to submit the accompanying report on the Health of the Royal Air Force during the year 1922.

Although the ratio of fresh cases of sickness to the strength of the total force shows an increase on the corresponding ratio for 1921, nevertheless the average duration of each case in days, the average number of days' sickness per head, the ratios of the number of sick daily, of deaths, and of invalids from the Service, all show an improvement as compared with previous years.

Further valuable research work on sandfly fever was carried out at Malta during the year, and a summary of the results is given in Chapter V. During 1922, sandfly fever accounted for over one-quarter of the total cases of sickness of over 48 hours' duration reported from abroad. The increase in the ratio of fresh cases of sickness for the total force was almost entirely due to the increase in the case incidence of sandfly fever.

The incidence of primary venereal disease in the Royal Air Force—already low—has been further reduced from 22·4 per thousand in 1921 to 19·2 during the year under review.

All tables in the report, where practicable, have been further condensed, as compared with previous years.

I have the honour to be, Sir,
Your obedient Servant,
D. MUNRO,
Air Commodore,
Director of Medical Services.

December 1923.

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CHAPTER I.—THE HEALTH OF THE ROYAL AIR FORCE AS A WHOLE.

General.

1. Table I shows details of the total sickness in the Royal Air Force during 1922. The corresponding figures and ratios for 1921 are shown in italics. As in 1921, R.A.F. personnel of the Inter-Allied Aeronautical Commission of Control and the Rhine Army of Occupation are included in the United Kingdom figures. The average strength of R.A.F. personnel of these two units combined was only 71.

2. The term Mediterranean Littoral has been retained in the present report and provides figures and ratios for comparison with those for 1921. As in 1921, this heading includes personnel of the Mediterranean Group (average strength 476), including R.A.F. personnel of the aircraft carrier "Pegasus," Egypt and Palestine (2,682), and drafts *en route* to and from areas abroad (323). In addition, R.A.F. personnel of the Constantinople force (287) are included in the figures for 1922. United Kingdom sickness is dealt with in detail in Chapter II, sickness in areas abroad in Chapter III. The term "Total Abroad" includes personnel in Iraq, India and the Mediterranean Littoral.

3. Compared with 1921, the ratios per thousand of strength of fresh cases of sickness, both including and excluding 48-hour cases, show an increase, but in spite of this, the average duration of each case in days, the average number of days' sickness per head, the ratio per 1,000 of strength of the number sick daily, deaths and invalids to the United Kingdom all show a reduction compared with the corresponding figures and ratios for 1921.

4. The ratio per 1,000 of strength of invalids from the service shows an apparent increase from 9·1 in 1921 to 15·1 in 1922. In the report for 1921, however, invalids from the service were shown under two tables, those discharged through navy, army and air force Hospitals and those through the agency of the Discharge Centre Medical Board. The ratio per 1,000 of strength of invalids from all sources during 1921 was 34·3. In the year 1922 all invalids from the service are shown in Table I, irrespective of the agency of discharge. Consequently the invaliding rate has fallen from 34·3 in 1921 to 15·1 in 1922.

5. The increase in the ratio of fresh cases of sickness during 1922 is almost entirely due to the rise in the case incidence of

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sandfly fever in Iraq during the year. Further reference is made to this in Chapter III, page 32.

6. Chart I, opposite, shows the monthly case incidence of sickness in ratios per thousand of strength in the United Kingdom, abroad and for the total force in 1921 and 1922. Cases of 48 housr duration or less are not included in the chart. The sickness abroad is further analysed in Chart IV, facing page 32.

7. Table IX, nosological table, page 14, shows sickness incidence, deaths and finally invalided in ratios per thousand of strength, average number sick daily and average duration of each case in days for the United Kingdom, abroad and for the total force during 1922. The corresponding ratios and figures for 1921 are shown in italics for each main sub-division of the table.

8. Table X, page 28, deals in greater detail with the various diseases starred in Table IX. The case incidence, deaths and final invalids in ratios per 1,000 of strength, average number sick daily and average duration of each case in days is shown for each geographical area abroad as well as for the United Kingdom and for the total force. In both Table IX and Table X the strength of each area or group of areas has been inserted at the head of each column, and at the foot of each column, the ratio per thousand of strength corresponding to a single case in each area or group of areas has been given for easy reference.

9. Diseases affecting the force as a whole, viz., venereal disease and upper air passage infections, are discussed in the present chapter; those peculiar to tropical climates are dealt with in detail in Chapter III.

10. The frequency of attack in certain diseases is shown in Table II. Comparing the years 1921 and 1922, the marked drop in the admission rate for dysentery and malaria during 1922 is associated with a decrease in the individual case rate, this being more marked for dysentery. Sandfly-fever with a largely increased admission rate, also shows an increase in the individual rate. Upper air passage infections with practically the same individual rates during the two years show a substantial increase in the admission rate. Venereal disease shows both decreased case and individual rates, although the proportion of relapses to the total number of cases was practically the same during the two years. The inference from the table is that, for the diseases mentioned above, an increase in the total case rate is apparently accompanied by an increased liability to recurrent attacks. But as it has not been found possible to work out in detail the exact relation of relapses to fresh infections, for each of the diseases mentioned in the table, the above inference can only be regarded as tentative.

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To face page 2.

CHART I MONTHLY CASE INCIDENCE OF SICKNESS IN RATIOS PER 1000 OF STRENGTH FOR THE UNITED KINGDOM, ABROAD AND FOR THE TOTAL FORCE IN 1921 & 1922.

(CASES OF 48 HOURS DURATION OR LESS ARE NOT INCLUDED.)

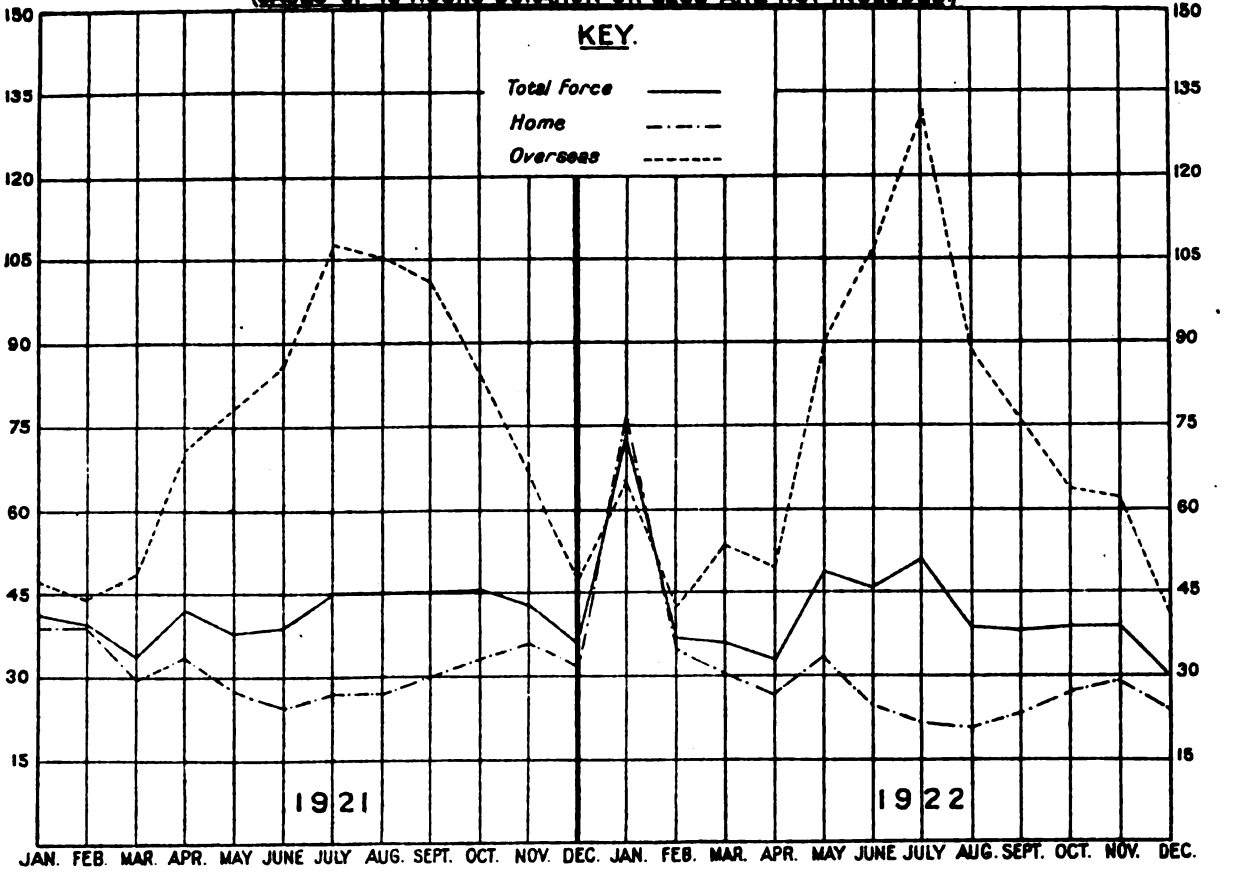

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Table I.—Analysis of Sickness at Home and Abroad.

Geographical Area.	Average strength.	Fresh cases of sickness.			Deaths.	Invalided out of service.	Invalided to United Kingdom.	Average duration of each case in days.		Average No. of days sickness per head.		Ratios per 1,000 of strength.					
												Fresh cases of sickness		Deaths.	Invalided out of service.	Invalided to United Kingdom.	No. sick daily.
		Less than 48 hours.	More than 48 hours.	Total.				48-hour cases included.	48-hour cases excluded.	48-hour cases included.	48-hour cases excluded.	48-hour cases included.	48-hour cases excluded.				48-hour cases included.	48-hour cases excluded.
United Kingdom:	No.	No.	No.	No.	No.	No.	No.											
1922 - -	21,074	7,905	8,060	15,965	53	376	2	9·9	18·2	7·5	7·0	757·6	382·5	2·5	17·8	(a)	20·6	19·1
1921 - -	*21,936*	*9,862*	*8,418*	*18,280*	*86*	*218*	*4*	*9·8*	*19·8*	*8·2*	*7·6*	*833·3*	*383·8*	*3·9*	*9·9*	*20·5(b)*	*22·4*	*20·8*
Mediterranean Littoral:																		
1922 - -	3,768	2,467	2,598	5,065	15	24	42	9·1	16·5	12·3	11·4	1,344·3	689·5	4·0	6·4	11·1	33·6	31·2
1921 - -	*3,306*	*2,262*	*2,101*	*4,363*	*22*	*18*	*59*	*11·2*	*21·8*	*14·8*	*13·9*	*1,319·7*	*635·5*	*6·7*	*5·4*	*17·8*	*40·5*	*38·0*
Iraq:																		
1922 - -	2,381	4,260	3,078	7,338	34	17	66	7·2	15·5	22·3	20·0	3,081·9	1,292·7	14·3	7·1	27·7	61·2	54·8
1921 - -	*1,282*	*1,688*	*1,413*	*3,101*	*12*	*9*	*50*	*9·1*	*18·6*	*22·0*	*20·4*	*2,418·9*	*1,102·2*	*9·4*	*7·0*	*39·0*	*60·3*	*56·0*
India:																		
1922 - -	1,703	3,256	1,133	4,389	22	20	52	6·2	19·4	15·9	12·9	2,577·2	665·3	12·9	11·7	30·5	43·4	35·3
1921 - -	*1,798*	*3,386*	*2,154*	*5,540*	*14*	*13*	*62*	*7·5*	*17·2*	*23·3*	*20·6*	*3,081·2*	*1,198·2*	*7·8*	*7·6*	*34·5*	*63·8*	*56·4*
Total Abroad:																		
1922 - -	7,852	9,983	6,809	16,792	71	61	160	7·6	16·5	16·1	14·3	2,138·6	867·2	9·0	7·8	20·4(c)	44·1	39·2
1921 - -	*6,386*	*7,336*	*6,668*	*13,004*	*48*	*40*	*171*	*9·2*	*19·2*	*18·6*	*17·0*	*2,036·3*	*887·6*	*7·5*	*6·3*	*26·8*	*51·0*	*46·8*
Total Force:																		
1922 - -	28,926	17,888	14,869	32,757	124	437	162	8·7	17·4	9·9	9·0	1,132·4	514·0	4·3	15·1	20·5(c)	27·0	24·6
1921 - -	*28,322*	*17,198*	*14,086*	*31,284*	*134*	*258(d)*	*175*	*9·5*	*19·6*	*10·5*	*9·7*	*1,104·6*	*497·3*	*4·7*	*9·1(d)*	*26·6(c)*	*28·9*	*26·7*

(a) Ratio not calculated, as average strength of personnel in Rhine Army of Occupation and Inter-Allied Aeronautical Commissions of Control were too small to make any useful comparison.

(b) Calculated on strength of R.A.F. personnel in Rhine Army of Occupation and Inter-Allied Aeronautical Commissions of Control.

(c) Calculated on strength outside British Isles.

(d) Excludes 711 airmen invalided out of service in 1921 by Discharge Centre Medical Board. If these are included the ratio per 1,000 for 1921 would be 34·3.

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TABLE II.—THE FREQUENCY OF ATTACK IN CERTAIN DISEASES.

	Sickness abroad.			Sickness at home or abroad.	
	Dysentery	Malaria.	Sandfly.	Upper Air Passage Infections.	Venereal diseases.*
Frequency of attack:—					
Sick once	154	398	1,434	1,846	595
Sick twice	11	56	155	118	77
Sick three times	—	14	17	16	13
Sick four times	—	4	4	2	—
Sick five times	—	2	—	—	—
Total number of individuals	165	474	1,510	1,982	685
Total number of cases	176	578	1,811	2,138	788
Number of cases arising from each 100 individuals attacked:—					
1922	107	122	120	108	115
1921	*113*	*126*	*110*	*107*	*118*
Case rates per 1,000 of strength:—					
1922	22·4	73·6	230·6	73·9	27·2
1921	*38·5*	*122·9*	*122·9*	*64·0*	*32·9*

Venereal Disease.

11. The measures adopted against venereal disease, which were described in detail in the 1921 Report, were continued successfully during the present year. The case incidence per 1,000 of strength of the total force for all types of venereal disease was 27·2 as compared with 36·1 in 1921. The average duration of each case fell from 52·2 days in 1921 to 51·2 days in 1922.

12. The primary rate, *i.e.*, cases reporting for treatment for the first time after infection, and excluding relapses and admissions for further treatment, was 19·2 per 1,000 of strength, compared with 22·4 in 1921. Chart II, facing page 6, shows the monthly primary case incidence rate in the United Kingdom,

* Excludes cases of congenital syphilis and of re-admissions for further treatment of syphilis.

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abroad and for the total force during 1921 and 1922. The chief points of interest in the chart are—

(i) The January peak for the total force, probably due to Christmas leave, which is general throughout the force.

(ii) The August peak, probably due to summer leave in personnel at Home.

(iii) The October peak, chiefly due to an increase of cases abroad, and in the main, attributable to the Constantinople Force.

13. Five hundred and sixty-nine cases of gonorrhœa were reported, of which 410 were primary infections. There were 122 admissions for relapses and further treatment, all of whom had received treatment within twelve months previously. There were a further 36 cases in which the disease had been contracted over twelve months previously and one case in which no data as to time of infection was obtainable.

14. Table III shows the effects of prophylactic disinfection on the contraction of venereal diseases during 1922. The totals for 1921 are given for comparison. The table is of interest in that it shows that a greater number of cases occurred amongst those who are reported to have used the prophylactic measures improperly or to have failed to make use of them at all. Further figures relating to venereal disease are given in the nosological tables IX and X, pages 16, 28 and 29.

TABLE III.—THE EFFECTS OF PROPHYLACTIC DISINFECTION ON THE CONTRACTION OF VENEREAL DISEASE DURING 1922.

Disease.	Contracted on leave.				Contracted on station.				Place of contraction unknown.			Total.			
	Prophylactic disinfection used.		No data available.	Total.	Prophylactic disinfection used.		No data available.	Total.	Possible infection denied.	No data as to disinfection or where contracted.	Total.	Prophylactic disinfection used.		No data, or infection denied.	Total.
	Properly.	Improperly or not at all.			Properly.	Improperly or not at all.						Properly.	Improperly or not at all.		
Gonorrhœa	12	118	9	139	71	172	7	250	11	10	21	83	290	37	410
Syphilis	5	13	—	18	11	29	3	43	2	7	9	16	42	12	70
Soft chancre	1	—	4	5	29	24	6	59	—	3	3	30	24	13	67
Total: 1922	18	131	13	162	111	225	16	352	13	20	33	129	356	62	547
1921	*13*	*100*	*23*	*136*	*97*	*269*	*99*	*465*	*24*	*8*	*32*	*110*	*369*	*154*	*633*

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Upper Air Passage Infections.

15. The case incidence per thousand of strength for the total force has increased from 64·0 in 1921 to 73·9 in 1922, the duration of each case being 8·0 days in 1922, compared with 8·3 in 1921. The Mediterranean Littoral, as in 1921, shows the highest rate of all areas, the rate being 117·6 per thousand of strength in 1922, compared with 110·4 in 1921. The case rate in the United Kingdom has increased from 55·8 in 1921 to 67·1 in 1922; in Iraq, it has fallen from 89·7 to 81·5; in India, from 61·2 to 51·1. Chart III, facing page 7, gives the monthly case incidence in ratios per thousand of strength in the United Kingdom, abroad and for the total force in 1921 and 1922. The peak for the total force is mainly due to a rise in the United Kingdom ratio, and the period coincides with the influenza epidemic at home during the same months. A probable explanation is that some of these cases with mild catarrhal symptoms diagnosed as rhinitis, pharyngitis, etc., were influenzal in origin. The case incidence for areas abroad is further analysed in Table IV, which shows the monthly case incidence in the Mediterranean Littoral, Iraq and India. It will be seen from this table that the rates in the Mediterranean Littoral were highest during the months of January and April and in India during January. This also partly explains the peak in the total force graph. Further detailed figures dealing with this group will be found in Table IX, page 15, and Table X, pages 28 and 29.

TABLE IV.—MONTHLY CASE INCIDENCE OF UPPER AIR PASSAGE INFECTIONS IN RATIOS PER 1,000 OF STRENGTH FOR AREAS ABROAD IN 1922.

	Jan.	Feb.	Mar.	Apr.	May	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Mediterranean Littoral -	13·8	10·3	9·6	14·1	8·5	6·2	9·0	11·0	10·0	5·5	12·9	8·4
Iraq - -	5·9	7·2	10·0	7·1	9·0	1·7	2·0	3·2	8·7	6·6	12·0	7·9
India - -	16·7	7·3	5·5	2·3	4·5	2·9	3·4	1·2	0·6	2·3	2·4	2·4

Cause of Injury.

16. Table V, page 7, gives an analysis of the nature and cause of injuries, the table being further sub-divided into injuries regarded as occurring on duty and those off duty. All injuries due to athletics and games, whether organised, *i.e.*, on duty, or unorganised (off duty), have been grouped together. As in 1921, injuries caused by flying accidents, airscrews, motor cycles, cars and lorries, are either general in nature or confined to the upper part of the body, whilst those caused by athletics are mostly confined to the lower limbs. Apart from injury,

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To face page 6.

CHART II. MONTHLY CASE INCIDENCE OF PRIMARY VENEREAL DISEASE IN RATIOS PER 1000 OF STRENGTH IN THE UNITED KINGDOM, ABROAD AND FOR THE TOTAL FORCE IN 1921 AND 1922.

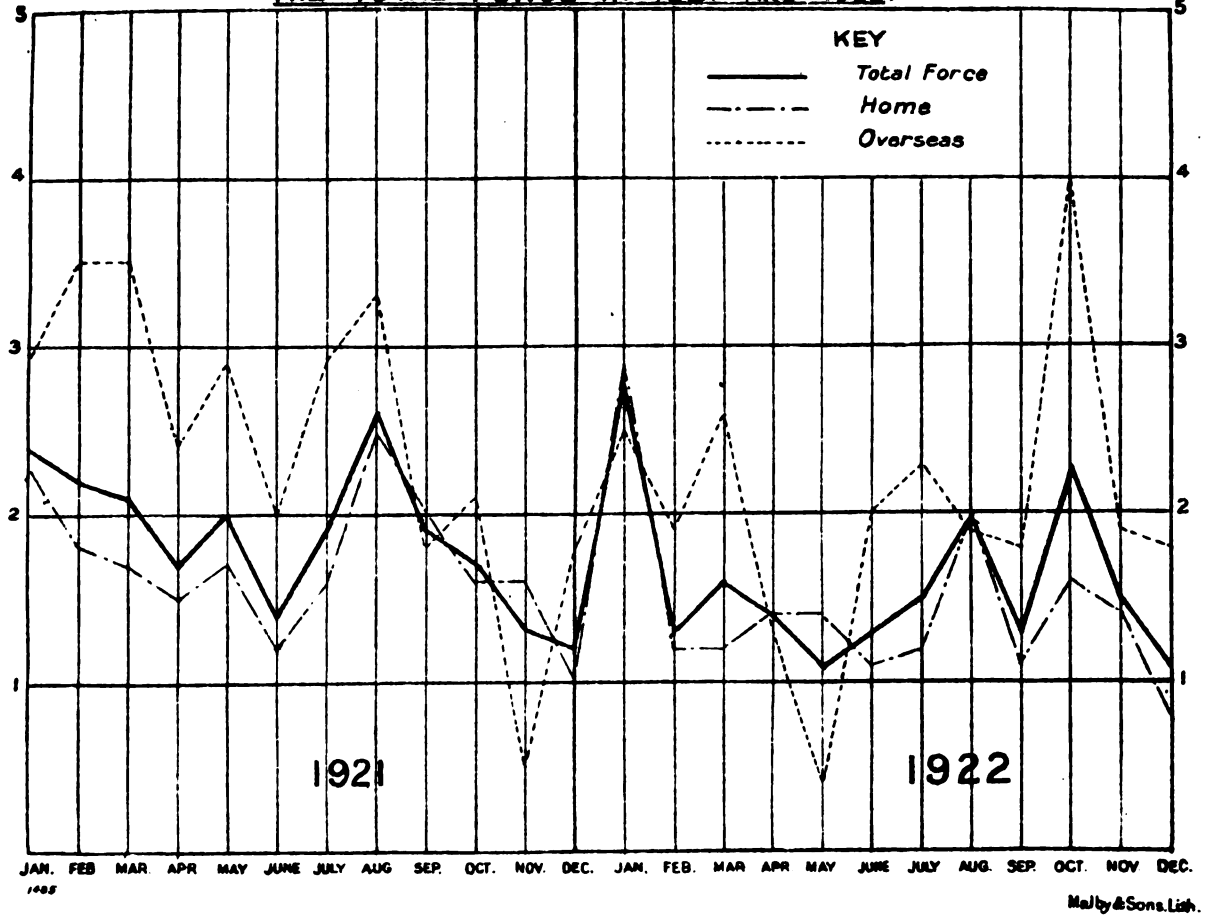

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TABLE VIII.—DISEASE AND INJURY RATIOS AMONGST DIFFERENT TYPES OF UNIT.

Type of Unit.	HOME.							ABROAD.						TOTAL.					
	Average Strength.	—	Ratios per 1,000 of average strength.				Average duration of case.	Average Strength.	Ratios per 1,000 of average strength.				Average duration of case.	Average Strength.	Ratios per 1,000 of average strength.				Average duration of case.
			Cases.	Deaths.	Invalided out of service.	No. sick daily.			Cases.	Deaths.	Invalided out of service.	No. sick daily.			Cases.	Deaths.	Invalided out of service.	No. sick daily.	
							Days.						Days.						Days.
Depôts (personnel) -	2,377	Disease -	350·0	1·3	41·2	19·4	20·2	—	—	—	—	—	—	2,377	350·0	1·3	41·2	19·4	20·2
		Injury -	30·7	0·4	0·4	1·9	22·7								30·7	0·4	0·4	1·9	22·7
		Total -	380·7	1·7	41·6	21·2	20·4		—	—	—	—	—		380·7	1·7	41·6	21·2	20·4
Depôts (store and repair) and armoured car companies (abroad).	1,876	Disease -	397·7	1·6	10·1	15·9	14·6	2,629	779·4	2·7	6·1	36·0	16·9	4,505	620·4	2·2	7·8	27·7	16·3
		Injury -	63·4	1·1	1·6	2·7	15·3		97·0	1·9	—	3·7	13·8		83·0	1·6	0·7	3·2	14·3
		Total -	461·1	2·7	11·7	18·6	14·7		876·4	4·6	6·1	39·7	16·5		703·4	3·8	8·4	30·9	16·0
Flying units - -	7,608	Disease -	296·5	0·7	14·2	15·4	19·0	4,085	788·8	2·4	6·9	34·1	15·8	11,693	468·5	1·3	11·6	22·0	17·1
		Injury -	60·7	3·2	0·5	3·1	19·2		119·5	10·0	1·5	6·3	19·1		81·2	5·6	0·9	4·3	19·1
		Total -	357·2	3·8	14·7	18·6	19·0		908·2	12·5	8·3	40·3	16·2		549·7	6·8	12·5	26·2	17·4
Headquarters and other small units.	2,133	Disease -	217·5	0·5	13·6	10·2	17·1	1,138	632·7	3·5	9·7	33·4	19·3	3,271	362·0	1·5	12·2	18·3	18·4
		Injury -	41·3	0·5	0·5	1·8	15·8		67·7	2·6	0·9	3·4	18·2		50·4	1·2	0·6	2·3	16·9
		Total -	258·8	0·9	14·1	12·0	16·9		700·4	6·2	10·5	36·8	19·2		412·4	2·8	12·8	20·6	18·3

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Schools, ground -	7,080	Disease -	379·2	1·3	15·7	18·3	17·6	—	—	—	—	—	—	7,080	379·2	1·3	15·7	18·3	17·6
		Injury -	47·0	0·7	0·1	2·4	18·8		—	—	—	—	—		47·0	0·7	0·1	2·4	18·8
		Total -	426·3	2·0	15·8	20·8	17·8		—	—	—	—	—		426·3	2·0	15·8	20·8	17·8
TOTAL - -	21,074	Disease -	331·3	1·0	17·4	16·5	18·1	7,852	763·1	2·8	6·9	34·4	16·5	28,926	448·5	1·5	14·5	21·3	17·4
		Injury -	51·2	1·6	0·5	2·6	18·8		104·0	6·3	0·9	4·9	17·0		65·5	2·8	0·6	3·2	18·1
		Total -	382·5	2·5	17·8	19·1	18·2		867·2	9·0	7·8	39·2	16·5		514·0	4·3	15·1	24·6	17·4

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TABLE IX.—NOSOLOGICAL TABLE FOR THE UNITED KINGDOM, ABROAD, AND THE TOTAL FORCE, 1922.

Disease.	United Kingdom. Average Strength, 21,074.					Abroad. Average Strength, 7,852.						Total Force. Average Strength, 28,926.				
	Ratio per 1,000 of average strength.			Averages.		Ratio per 1,000 of average strength.				Averages.		Ratio per 1,000 of average strength.			Averages.	
	Cases.	Deaths.	Finally invalided.	No. sick daily.	Duration of case.	Cases.	Deaths.	Invalided to United Kingdom.	Finally invalided.	No. sick daily.	Duration of case.	Cases.	Deaths.	Finally invalided.	No. sick daily.	Duration of case.
Communicable Diseases.				No.	Days.					No.	Days.				No.	Days.
Diphtheria	0·2	—	—	0·3	26·2	1·4	—	—	—	0·6	19·3	0·5	—	—	0·9	21·1
*Dysentery	0·4	—	—	1·4	63·2	22·4	0·13	1·40	0·25	17·0	35·2	6·4	0·03	0·07	18·3	36·4
*Enteric fever and paratyphoid	—	—	—	—	—	3·3	0·13	0·13	—	4·7	66·0	0·9	0·03	—	4·7	65·0
*Enteritis (acute) and gastro-enteritis (acute)	2·5	—	—	1·2	8·1	42·7	—	—	—	7·3	8·0	13·4	—	—	8·5	8·0
Impetigo contagiosa	12·1	—	—	13·6	19·6	10·2	—	0·25	—	3·2	14·5	11·5	—	—	16·8	18·4
*Influenza (including influenzal pneumonia)	50·9	—	—	27·0	9·2	11·2	—	—	—	1·8	7·6	40·1	—	—	28·8	9·1
*Malaria	3·3	0·05	—	3·6	12·8	73·6	—	1·53	—	22·7	14·3	22·4	0·03	—	26·3	14·8
Measles	0·4	—	—	0·5	18·8	0·1	—	—	—	0·0	15·0	0·3	—	—	0·5	18·4
Mumps	1·0	—	—	1·1	20·0	1·4	—	—	—	0·6	21·3	1·1	—	—	1·8	20·3
Pneumonia, lobar	1·8	0·09	—	3·7	36·2	1·9	0·13	0·25	—	1·4	35·1	1·8	0·10	—	5·1	35·9
*Pyrexia of unknown origin	1·7	—	—	0·6	6·3	7·5	0·13	—	—	2·8	17·3	3·2	0·03	—	3·4	13·2
Rubella	0·3	—	—	0·4	18·4	0·4	—	—	—	0·1	18·0	0·3	—	—	0·5	18·3
*Sandfly fever	—	—	—	—	—	230·6	—	—	—	39·8	8·0	62·6	—	—	39·8	8·0

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*Scabies	8·4	—	—	5·5	11·5	2·8	—	—	—	0·5	8·7	6·8	—	—	6·0	11·1
Scarlet fever	3·4	—	—	9·6	48·7	2·4	—	0·13	—	2·2	41·6	3·1	—	—	11·8	47·2
Smallpox	—	—	—	—	—	1·1	—	0·13	—	1·1	46·1	0·3	—	—	1·1	46·1
Tuberculosis.																
Respiratory	1·9	0·05	1·80	5·0	46·4	1·1	0·13	0·64	0·89	3·8	155·8	1·7	0·07	1·56	8·8	67·0
Other	1·0	0·14	0·43	3·6	60·5	0·1	—	—	—	0·3	123·0	0·8	0·10	0·31	4·0	63·3
Total—Tuberculosis	2·9	0·19	2·23	8·6	51·5	1·3	0·13	0·64	0·89	4·2	152·5	2·5	0·17	1·87	12·8	65·7
Acute upper air passage infections.																
Laryngitis	1·7	—	—	0·8	8·2	1·1	—	—	—	0·4	18·0	1·6	—	—	1·3	10·0
Inflammation of fauces, naso-pharyngitis and pharyngitis	33·2	—	—	14·3	7·5	53·6	—	—	—	7·9	6·8	38·8	—	—	22·2	7·2
Rhinitis, acute catarrhal	7·8	—	—	2·9	6·4	4·5	—	—	—	0·6	6·7	6·9	—	—	3·5	6·4
Tonsillitis (including quinsy and Vincent's Angina)	24·3	—	—	13·6	9·7	33·0	—	—	—	6·0	8·5	26·7	—	—	19·7	9·3
Total—Upper air passage infections	67·1	—	—	31·6	8·2	92·2	—	—	—	15·0	7·5	73·9	—	—	46·6	8·0
Venereal Disease.																
Gonorrhœa, acute	14·4	—	—	50·0	60·3	13·8	—	—	—	16·2	54·9	14·2	—	—	66·3	58·9
Gleet, relapse and other complications	5·4	—	—	16·2	51·8	6·7	—	0·25	—	6·9	47·6	5·8	—	—	23·1	50·5
Total—Gonorrhœa	19·8	—	—	66·2	58·0	20·5	—	0·25	—	23·2	52·5	20·0	—	—	89·4	56·4

N.B.—For "United Kingdom," the ratio 0·05 = one case per 1,000 of strength; for "Abroad," the ratio 0·13 = one case per 1,000 of strength; for "Total Force," the ratio 0·03 = one case per 1,000 of strength.

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TABLE IX.—NOSOLOGICAL TABLE FOR THE UNITED KINGDOM, ABROAD, AND THE TOTAL FORCE, 1922—*cont.*

Disease.	United Kingdom. Average Strength, 21,074.					Abroad. Average Strength, 7,852.						Total Force. Average Strength, 28,926.				
	Ratio per 1,000 of average strength.			Averages.		Ratio per 1,000 of average strength.				Averages.		Ratio per 1,000 of average strength.			Averages.	
	Cases.	Deaths.	Finally invalided.	No. sick daily.	Duration of case.	Cases.	Deaths.	Invalided to United Kingdom.	Finally invalided.	No. sick daily.	Duration of case.	Cases.	Deaths.	Finally invalided.	No. sick daily.	Duration of case.
Communicable Diseases—*cont.*				No.	Days.					No.	Days.				No.	Days.
Syphilis:																
Primary admissions	2·7	—	0·09	5·3	33·8	4·8	—	0·13	—	5·0	47·9	3·3	—	0·07	10·3	39·4
Admissions for further treatment	1·5	—	—	3·2	36·6	1·8	—	—	—	0·7	18·6	1·6	—	—	3·9	31·1
Total—Syphilis	4·2	—	0·09	8·5	34·8	6·6	—	0·13	—	5·7	40·0	4·9	—	0·07	14·2	36·7
Soft chancre	0·9	—	—	1·4	26·4	6·4	—	—	—	5·5	40·5	2·4	—	—	6·9	36·6
*Total—Venereal diseases	24·9	—	0·09	76·1	52·9	33·5	—	0·38	—	34·4	47·7	27·2	—	0·07	110·5	51·2
Other communicable diseases	6·4	0·09	0·05	5·4	14·7	7·1	0·25	0·51	0·13	5·0	32·4	6·6	0·14	0·07	10·4	19·9
*TOTAL — COMMUNICABLE DISEASES	187·7	0·43	2·37	190·2	17·6	547·2	0·89	5·35	1·27	164·5	13·9	284·9	0·55	2·07	354·6	15·7
1921	*173·5*	*0·32*	*1·91*	*203·9*	*19·6*	*539·8*	*1·57*	*6·42*	*1·10*	*169·0*	*17·9*	*256·1*	*0·60*	*1·73*	*372·9*	*18·8*

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Contacts	1·8	—	—	1·1	10·2	1·1	—	—	—	0·3	12·5	1·6	—	—	1·4	10·7
Other Common Diseases due to Infection.																
Abscess, hand and finger	2·2	—	—	2·2	17·1	1·4	—	—	—	0·4	14·1	2·0	—	—	2·6	16·5
Abscess, other	5·3	—	—	4·9	16·2	5·1	—	0·13	—	1·7	15·1	5·2	—	—	6·6	15·9
Boils	4·6	—	—	3·0	11·2	10·2	—	0·13	—	2·4	10·8	6·1	—	—	5·3	11·1
Carbuncle	0·8	—	—	0·7	14·0	0·4	—	—	—	0·2	29·7	0·7	—	—	0·9	16·3
Cellulitis	7·0	—	—	5·6	13·9	19·4	—	0·13	—	6·2	14·9	10·3	—	—	11·8	14·4
Gangrene	0·1	—	—	0·1	27·0	—	—	—	—	—	—	0·1	—	—	0·1	27·0
Lymphadenitis and lymphangitis	1·6	—	—	2·1	22·2	4·5	—	—	—	1·7	18·2	2·4	—	—	3·8	20·2
Osteo-myelitis, periostitis, osteitis	0·4	—	—	0·6	28·0	1·3	—	0·13	—	1·2	44·9	0·6	—	—	1·8	37·4
Pyæmia, septicæmia	0·1	0·09	—	0·0	4.0	0·8	0·51	—	—	0·4	27·5	0·3	0·21	—	0·5	21·6
Ulcer	0·9	—	0·09	1·5	28·0	2·7	—	0·13	—	1·1	19·6	1·4	—	0·07	2·6	23·6
TOTAL—OTHER COMMON DISEASES DUE TO INFECTION	22·9	0·09	0·09	20·6	15·6	45·6	0·51	0·64	—	15·5	15·8	29·0	0·21	0·07	36·1	15·7
1921	*24·5*	—	*0·18*	*21·1*	*14·3*	*50·9*	*0·31*	*0·16*	—	*12·7*	*14·3*	*30·5*	*0·07*	*0·14*	*33·8*	*14·3*
Effects of Parasites	0·5	—	—	0·1	5·0	1·4	—	—	—	0·2	6·8	0·7	—	—	0·3	6·0
Diseases of Nervous System and Brain.																
Neuritis	0·5	—	0·05	0·5	17·8	1·7	—	0·13	—	2·0	54·8	0·8	—	0·03	2·5	37·8
Nerve paralysis	0·4	—	0·09	1·0	45·9	0·3	—	—	—	0·2	34·5	0·3	—	0·07	1·2	43·6
Epilepsy (including observation cases)	0·9	—	0·52	1·6	29·8	1·3	—	0·51	0·51	1·5	53·3	1·0	—	0·52	3·0	37·9

N.B.—For "United Kingdom," the ratio 0·05 = one case per 1,000 of strength; for "Abroad," the ratio 0·13 = one case per 1,000 of strength; for "Total Force," the ratio 0·03 = one case per 1,000 of strength.

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TABLE IX.—NOSOLOGICAL TABLE FOR THE UNITED KINGDOM, ABROAD, AND THE TOTAL FORCE, 1922—*cont.*

Disease.	United Kingdom. Average Strength, 21,074.					Abroad. Average Strength, 7,852.						Total Force. Average Strength, 28,926.				
	Ratio per 1,000 of average strength.			Averages.		Ratio per 1,000 of average strength.				Averages.		Ratio per 1,000 of average strength.			Averages.	
	Cases.	Deaths.	Finally invalided.	No. sick daily.	Duration of case.	Cases.	Deaths.	Invalided to United Kingdom.	Finally invalided.	No. sick daily.	Duration of case.	Cases.	Deaths.	Finally invalided.	No. sick daily.	Duration of case.
Diseases of Nervous System and Brain—*cont.*				No.	Days.					No.	Days.				No.	Days.
Neurasthenia	3·1	—	0·81	4·6	25·5	3·6	—	0·51	0·64	3·8	49·1	3·2	—	0·76	8·4	32·5
Mental diseases (including observation cases)	1·1	—	1·04	5·8	91·9	0·3	—	0·25	1·02	1·4	246·5	0·9	—	1·04	7·1	104·3
Other diseases of nervous system	3·0	0·05	1·33	4·5	25·9	5·1	—	1·02	0·38	3·2	29·3	3·6	0·03	1·07	7·7	27·2
TOTAL—DISEASES OF NERVOUS SYSTEM AND BRAIN	9·1	0·05	3·84	18·0	34·4	12·1	—	2·42	2·55	11·9	45·8	9·9	0·03	3·49	30·0	38·2
1921	*8·9*	*0·14*	*2·60*	*15·1*	*28·2*	*14·1*	—	*6·73*	*1·10*	*15·6*	*63·2*	*10·1*	*0·11*	*2·26*	*30·7*	*39·3*
Diseases of the Eye.																
Infections	3·0	—	0·28	3·4	19·5	5·0	—	0·13	—	2·0	18·3	3·5	—	0·21	5·3	19·1
Defects of vision	2·9	—	1·33	2·7	16·0	2·2	—	1·15	0·38	3·3	69·9	2·7	—	1·07	5·9	27·8
TOTAL—DISEASES OF EYE	5·9	—	1·61	6·1	17·8	7·1	—	1·27	0·38	5·2	34·0	6·2	—	1·28	11·3	22·8
1921	*5·8*	—	*0·55*	*6·8*	*19·4*	*3·8*	—	*0·94*	*0·31*	*2·6*	*40·0*	*5·4*	—	*0·49*	*9·4*	*22·7*

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Diseases of Ear and Nose.																	
Otitis media	0·0	—	—	0·1	23·0	—	—	—	—	—	—	—	—	—	0·1	23·0
Otitis media, acute	0·8	—	—	1·2	25·4	1·8	—	—	—	0·6	15·6	1·1	—	—	1·8	21·0
Otitis media, chronic	3·1	—	2·09	2·4	13·2	2·9	—	0·64	0·25	2·6	41·4	3·1	—	1·59	5·0	20·5
Other diseases of ear and nose	4·7	—	0·24	7·1	26·1	4·1	—	0·13	—	1·2	13·3	4·5	—	0·17	8·2	23·0
TOTAL—DISEASES OF EAR AND NOSE	8·7	—	2·33	10·7	21·4	8·8	—	0·76	0·25	4·4	23·2	8·7	—	1·76	15·1	21·9
1921	*8·5*	—	*1·05*	*12·2*	*23·9*	*12·5*	—	*0·47*	*0·31*	*3·3*	*15·0*	*9·4*	—	*0·88*	*15·5*	*21·3*
Diseases of the Circulatory System.																
Endocarditis, acute	—	—	—	—	—	0·1	0·13	—	—	—	1·0	0·0	0·03	—	—	1·0
Valvular disease of the heart	0·4	—	0·24	0·4	18·1	1·5	—	1·15	1·02	2·6	79·5	0·7	—	0·45	3·1	53·2
Disease of myocardium	0·1	—	0·05	0·3	59·0	0·1	—	—	—	0·1	26·0	0·1	—	0·03	0·4	48·0
Disordered action of the heart	2·8	0·05	0·71	3·7	23·0	9·3	—	2·29	0·38	11·9	59·6	4·6	0·03	0·62	15·6	43·2
Varix	1·7	—	0·43	2·3	24·1	0·3	—	—	—	0·2	29·5	1·3	—	0·31	2·5	24·4
Other diseases of the circulatory system	0·9	0·05	0·24	1·0	18·7	2·0	—	0·25	—	1·0	23·7	1·2	0·0	0·17	2·1	21·0
TOTAL—DISEASES OF THE CIRCULATORY SYSTEM	5·9	0·09	1·66	7·8	22·9	13·4	0·13	3·69	1·40	15·8	54·9	8·0	0·1	1·59	23·6	37·5
1921	*5·2*	*0·18*	*0·78*	*8·2*	*25·9*	*15·5*	*0·16*	*3·60*	*0·94*	*12·7*	*46·9*	*7·6*	*0·18*	*0·81*	*20·9*	*35·6*
Diseases of lymphatic system and ductless glands	0·5	—	0·33	1·4	50·5	0·6	—	0·13	—	0·8	56·6	0·5	—	0·24	2·2	52·5

N.B.—For "United Kingdom," the ratio 0·05 = one case per 1,000 of strength; for "Abroad," the ratio 0·13 = one case per 1,000 of strength; for "Total Force," the ratio 0·03 = one case per 1,000 of strength.

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TABLE IX.—NOSOLOGICAL TABLE FOR THE UNITED KINGDOM, ABROAD, AND THE TOTAL FORCE, 1922—*cont.*

Disease.	United Kingdom. Average Strength, 21,074.					Abroad. Average Strength, 7,852.						Total Force. Average Strength, 28,926.				
	Ratio per 1,000 of average strength.			Averages.		Ratio per 1,000 of average strength.				Averages.		Ratio per 1,000 of average strength.			Averages.	
	Cases.	Deaths.	Finally invalided.	No. sick daily.	Duration of case.	Cases.	Deaths.	Invalided to United Kingdom.	Finally invalided.	No. sick daily.	Duration of case.	Cases.	Deaths.	Finally invalided.	No. sick daily.	Duration of case.
				No.	Days.					No.	Days.				No.	Days.
Diseases of the Respiratory System.																
Bronchitis	8·4	—	0·28	7·4	15·4	11·2	—	0·13	0·25	4·3	18·0	9·1	—	0·28	11·7	16·3
Asthma	0·2	—	0·05	0·3	24·4	0·8	—	0·13	0·13	0·2	9·8	0·4	—	0·07	0·5	16·5
Broncho-pneumonia	0·5	0·09	—	0·6	19·4	0·8	0·25	0·13	—	0·5	29·8	0·6	0·14	—	1·1	23·1
Pleurisy	2·2	—	—	3·8	30·5	2·8	—	0·25	—	3·0	49·4	2·4	—	—	6·8	36·6
Other diseases of the respiratory system	0·3	0·05	0·05	0·4	18·9	—	—	—	—	—	—	0·2	0·03	0·03	0·4	18·9
TOTAL—DISEASES OF THE RESPIRATORY SYSTEM	11·6	0·14	0·38	12·5	18·7	15·5	0·25	0·64	0·38	8·0	23·9	12·7	0·17	0·38	20·5	20·4
1921	*14·0*	*0·14*	*0·64*	*13·0*	*15·4*	*22·1*	*0·16*	*1·72*	*0·63*	*9·5*	*24·5*	*15·8*	*0·14*	*0·64*	*22·5*	*18·3*
Disease of teeth and gums	2·7	—	0·09	1·2	7·8	3·6	—	—	—	0·7	8·6	2·9	—	0·07	1·9	8·1

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Diseases of the Digestive System.																
Hypertrophy of tonsils	4·1	—	—	3·3	13·9	0·4	—	—	—	0·1	12·3	3·1	—	—	3·4	13·9
Gastritis, acute	1·8	—	—	1·0	9·5	2·4	—	—	—	0·4	7·7	1·9	—	—	1·4	8·9
Gastritis, chronic	0·5	—	0·14	1·4	49·9	1·5	—	0·25	0·25	1·1	34·0	0·8	—	0·17	2·5	41·2
Dyspepsia	3·6	—	0·05	2·4	11·5	4·2	—	0·13	—	1·0	11·5	3·7	—	0·03	3·4	11·5
Appendicitis	4·4	0·05	0·09	7·1	28·1	5·6	0·38	0·13	—	4·2	34·6	4·7	0·14	0·07	11·3	30·2
Hernia	3·6	—	0·24	5·4	26·1	2·9	—	0·13	—	2·2	35·7	3·4	—	0·17	7·7	28·3
Constipation	2·6	—	—	1·2	7·9	18·2	—	0·13	—	2·4	6·2	6·8	—	—	3·6	6·7
Colic	0·8	—	—	0·4	8·6	2·8	—	—	—	0·6	10·0	1·3	—	—	1·0	9·4
Hæmorrhoids	2·0	—	—	2·3	19·5	4·3	—	—	—	1·8	19·1	2·7	—	—	4·1	19·3
Jaundice	1·6	—	—	1·8	19·8	9·2	0·13	—	—	3·5	18·0	3·7	0·03	—	5·4	18·5
Other diseases of digestive system	3·0	0·09	0·33	4·6	26·5	6·2	0·13	0·38	—	3·8	28·6	3·9	0·10	0·24	8·4	27·4
TOTAL — DISEASES OF THE DIGESTIVE SYSTEM	27·9	0·14	0·85	30·8	19·1	57·8	0·64	1·15	0·25	21·3	17·1	36·1	0·28	0·69	52·1	18·2
1921	*28·2*	*0·14*	*0·18*	*42·0*	*24·8*	*65·4*	*0·47*	*0·47*	—	*18·2*	*15·9*	*36·6*	*0·21*	*0·14*	*60·2*	*21·2*
Diseases due to disorders of nutrition or metabolism	0·2	—	0·14	0·6	46·6	—	—	—	—	—	—	0·2	—	0·10	0·6	46·6
Diseases of the Generative System.																
Phimosis	1·9	—	—	2·2	19·8	2·7	—	—	—	1·0	16·6	2·1	—	—	3·2	18·7
Varicocele	0·9	—	—	1·1	23·0	0·3	—	—	—	0·1	14·5	0·7	—	—	1·2	22·2
Other diseases of the generative system	4·2	—	—	3·7	15·3	6·4	—	0·13	—	2·7	19·4	4·8	—	—	6·3	16·7
TOTAL — DISEASES OF THE GENERATIVE SYSTEM	7·0	—	—	7·0	17·5	9·3	—	0·13	—	3·7	18·4	7·6	—	—	10·7	17·8
1921	*6·1*	—	*0·05*	*7·2*	*19·5*	*10·5*	—	—	—	*3·6*	*19·8*	*7·0*	—	*0·04*	*10·8*	*19·6*

N.B.—For "United Kingdom," the ratio 0·05 = one case per 1,000 of strength; for "Abroad" the ratio 0·13 = one case per 1,000 of strength; for "Total Force," the ratio 0·03 = one case per 1,000 of strength.

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TABLE IX.—NOSOLOGICAL TABLE FOR THE UNITED KINGDOM, ABROAD, AND THE TOTAL FORCE, 1922—*cont.*

Disease.	United Kingdom. Average Strength, 21,074.					Abroad. Average Strength, 7,852.						Total Force. Average Strength, 28,926.				
	Ratio per 1,000 of average strength.			Averages.		Ratio per 1,000 of average strength.				Averages.		Ratio per 1,000 of average strength.			Averages.	
	Cases.	Deaths.	Finally invalided.	No. sick daily.	Duration of case.	Cases.	Deaths.	Invalided to United Kingdom.	Finally invalided.	No. sick daily.	Duration of case.	Cases.	Deaths.	Finally invalided.	No. sick daily.	Duration of case.
Diseases of Organs of Locomotion.				No.	Days.					No.	Days.				No.	Days.
Diseases of the bone	0·8	—	0·33	1·4	32·5	0·3	—	—	—	0·1	14·0	0·6	—	0·24	1·5	30·4
Diseases of the joints	4·9	—	0·76	6·0	21·3	6·4	—	0·13	—	3·5	25·6	5·3	—	0·55	9·5	22·7
Myalgia and lumbago	3·9	—	—	1·9	8·5	6·2	—	—	—	1·1	8·0	4·5	—	—	3·0	8·3
Diseases of muscles, tendons and bursæ	0·8	—	—	1·0	22·2	0·6	—	0·13	—	0·3	23·0	0·7	—	—	1·3	22·4
Deformities of limbs	3·2	—	1·47	2·8	14·9	2·5	—	—	—	1·3	23·7	3·0	—	1·07	4·1	16·9
TOTAL—DISEASES OF ORGANS OF LOCOMOTION	13·5	—	2·56	13·1	16·8	16·0	—	0·25	—	6·3	18·2	14·2	—	1·87	19·4	17·2
1921	*11·6*	—	*0·78*	*14·7*	*21·1*	*14·7*	—	*1·72*	*0·63*	*5·3*	*20·7*	*12·3*	—	*0·74*	*20·0*	*21·0*
Diseases of areolar tissue and skin	12·1	—	0·24	13·7	19·7	9·6	—	0·13	—	3·7	17·9	11·4	—	0·17	17·4	19·3

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Diseases of Urinary Organs.																
Nephritis	0·2	—	—	0·4	37·2	0·1	—	—	—	0·1	37·0	0·2	—	—	0·5	37·2
Incontinence of urine	0·4	—	0·43	0·4	16·3	0·5	—	—	—	0·1	8·0	0·4	—	0·31	0·5	13·8
Other diseases of urinary organs	1·5	—	0·14	3·1	36·5	1·3	—	0·25	0·13	1·3	48·6	1·4	—	0·14	4·4	39·4
TOTAL—DISEASES OF URINARY ORGANS	2·1	—	0·57	3·9	32·4	1·9	—	0·25	0·13	1·5	37·0	2·0	—	0·45	5·4	33·6
1921	*2·9*	—	*0·41*	*5·9*	*34·4*	*3·3*	*0·16*	*0·63*	*0·31*	*2·6*	*44·4*	*3·0*	*0·04*	*0·39*	*8·5*	*36·9*
Tumours and Cysts.																
Tumours, non-malignant	1·0	—	—	1·3	22·9	0·6	—	0·13	0·13	0·5	35·6	0·9	—	0·03	1·7	25·4
Tumours, malignant	0·1	—	0·09	0·1	25·5	0·4	0·25	0·25	0·13	1·2	145·3	0·2	0·07	0·10	1·3	97·4
Cysts	1·7	—	—	1·2	12·2	1·3	—	—	—	0·5	17·1	1·6	—	—	1·7	13·3
TOTAL—TUMOURS AND CYSTS	2·8	—	0·09	2·6	16·4	2·3	0·25	0·38	0·25	2·2	43·6	2·6	0·07	0·14	4·8	22·8
1921	*1·9*	*0·05*	—	*2·2*	*19·4*	*2·4*	—	—	—	*0·8*	*19·5*	*2·0*	*0·04*	—	*3·0*	*19·5*
Poisons.																
Effects of alcohol	0·1	—	—	0·0	6·0	0·9	—	0·13	—	0·6	29·0	0·3	—	—	0·6	23·9
Other poisons	2·6	—	—	0·8	5·1	0·5	0·13	—	—	0·0	3·0	2·0	0·03	—	0·8	5·0
TOTAL—POISONS	2·7	—	—	0·8	5·2	1·4	0·13	0·13	—	0·6	19·5	2·3	0·03	—	1·4	7·5
1921	*0·4*	—	—	*0·2*	*7·1*	*1·1*	*0·16*	—	—	*0·3*	*13·9*	*0·5*	*0·04*	—	*0·4*	*10·3*
Morbid conditions due to flying	0·0	—	0·05	0·0	8·0	—	—	—	—	—	—	0·0	—	0·03	0·0	8·0

N.B.—For "United Kingdom," the ratio 0·05 = one case per 1,000 of strength; for "Abroad," the ratio 0·13 = one case per 1,000 of strength; for "Total Force," the ratio 0·03 = one case per 1,000 of strength.

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TABLE IX.—NOSOLOGICAL TABLE FOR THE UNITED KINGDOM, ABROAD, AND THE TOTAL FORCE, 1922—*cont.*

Disease.	United Kingdom. Average Strength, 21,074.					Abroad. Average Strength, 7,852.						Total Force. Average Strength, 28,926.				
	Ratio per 1,000 of average strength.			Averages.		Ratio per 1,000 of average strength.				Averages.		Ratio per 1,000 of average strength.			Averages.	
	Cases.	Deaths.	Finally invalided.	No. sick daily.	Duration of case.	Cases.	Deaths.	Invalided to United Kingdom.	Finally invalided.	No. sick daily.	Duration of case.	Cases.	Deaths.	Finally invalided.	No. sick daily.	Duration of case.
				No.	Days.					No.	Days.				No.	Days.
No appreciable disease -	3·8	—	0·05	2·3	10·4	3·9	—	—	—	1·4	16·3	3·8	—	0·03	3·7	12·1
Debility - - - - -	2·3	—	0·09	2·1	15·7	4·3	—	0·89	—	2·5	27·1	2·8	—	0·07	4·6	20·4
*TOTAL—ALL DISEASES -	331·3	0·95	17·37	346·7	18·1	763·1	2·80	18·21	6·88	270·3	16·5	448·5	1·46	14·52	616·9	17·4
1921	*322·8*	*1·00*	*9·44*	*381·1*	*19·6*	*796·2*	*2·98*	*24·74*	*5·64*	*267·7*	*19·2*	*429·4*	*1·45*	*8·58*	*648·8*	*19·5*
***General Injuries.**																
Burns and scalds - -	0·4	0·14	—	1·2	47·9	1·7	0·51	—	—	0·9	26·0	0·8	0·24	—	2·1	35·0
Heatstroke, sunstroke and heat exhaustion - -	0·6	—	—	0·3	9·4	23·6	1·15	0·25	—	5·2	10·2	6·8	0·31	—	5·5	10·1
Drowning - - - -	0·1	0·14	—	—	—	0·1	0·13	—	—	—	—	0·1	0·14	—	—	—
Multiple minor injuries -	1·3	—	—	1·2	15·6	2·8	—	0·13	—	1·2	19·4	1·7	—	—	2·4	17·3
Multiple fractures - - -	0·9	0·62	0·05	1·9	37·6	2·0	1·66	—	—	0·7	16·4	1·2	0·89	0·03	2·6	27·6

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Gunshot wounds	0·0	—	—	0·2	73·0	—	—	—	—	—	—	0·0	—	—	0·2	73·0
Multiple wounds	0·1	0·05	—	0·3	42·3	1·0	1·02	—	—	—	—	0·3	0·31	—	0·3	11·5
Others	0·2	0·09	—	0·0	2·7	0·1	0·13	—	—	—	—	0·2	0·10	—	0·0	2·2
*TOTAL—GENERAL INJURIES	3·8	1·04	0·05	5·1	23·8	31·2	4·59	0·38	—	8·0	11·5	11·2	2·01	0·03	13·1	14·8
1921	*5·6*	*2·64*	*0·09*	*4·9*	*14·6*	*20·8*	*4·07*	*0·47*	*0·16*	*4·5*	*12·4*	*9·0*	*2·97*	*0·11*	*9·4*	*13·5*
Local Injuries.																
(i) *Head and Neck.*																
Contusions and wounds	4·4	—	—	2·7	10·9	4·7	—	—	—	0·9	9·2	4·5	—	—	3·7	10·4
Gunshot wounds	—	—	—	—	—	0·4	0·38	—	—	—	0·3	0·1	0·10	—	—	0·3
Burns and scalds	0·4	—	—	0·3	14·4	0·6	—	—	—	0·1	7·2	0·4	—	—	0·4	11·6
Fracture of skull	0·5	0·33	0·05	0·6	20·4	1·0	0·89	0·13	0·13	0·6	27·5	0·7	0·48	0·07	1·2	23·4
Concussion of brain	1·7	—	0·05	1·5	14·8	2·2	—	0·25	0·13	1·9	41·1	1·8	—	0·07	3·4	23·2
Other fractures	0·2	—	—	0·1	8·5	0·1	—	—	—	0·0	13·0	0·2	—	—	0·1	9·4
Other injuries	1·1	0·05	—	1·0	16·1	1·3	—	—	—	0·4	15·0	1·1	0·03	—	1·4	15·8
TOTAL—*Head and Neck*	8·3	0·38	0·09	6·2	13·1	10·3	1·27	0·38	0·25	4·0	18·0	8·8	0·63	0·14	10·2	14·6
(ii) *Trunk.*																
Contusions and wounds	1·9	0·05	—	1·3	11·5	3·2	—	—	—	0·7	10·7	2·3	0·03	—	2·0	11·2
Gunshot wounds	0·1	0·05	0·05	0·1	25·5	0·8	0·13	—	—	1·1	67·2	0·3	0·07	0·03	1·2	56·7
Fractures	0·3	—	—	0·2	12·7	0·4	—	—	—	0·1	11·3	0·3	—	—	0·3	12·2
Other injuries	0·7	0·05	0·05	1·0	23·6	0·4	—	0·13	—	0·4	54·0	0·6	0·03	0·03	1·4	28·7
TOTAL—*Trunk*	3·0	0·14	0·09	2·6	14·9	4·7	0·13	0·13	—	2·4	23·7	3·5	0·14	0·07	5·0	18·1

N.B.—For "United Kingdom," the ratio 0·05 = one case per 1,000 of strength; for "Abroad," the ratio 0·13 = one case per 1,000 of strength; for "Total Force," the ratio 0·03 = one case per 1,000 of strength.

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TABLE IX.—NOSOLOGICAL TABLE FOR THE UNITED KINGDOM, ABROAD, AND THE TOTAL FORCE, 1922—*cont.*

Disease.	United Kingdom. Average Strength, 21,074.					Abroad. Average Strength, 7,852.						Total Force, Average Strength, 28,926.				
	Ratio per 1,000 of average strength.			Averages.		Ratio per 1,000 of average strength.				Averages.		Ratio per 1,000 of average strength.			Averages.	
	Cases.	Deaths.	Finally invalided.	No. sick daily.	Duration of case.	Cases.	Deaths.	Invalided to United Kingdom.	Finally invalided.	No. sick daily.	Duration of case.	Cases.	Deaths.	Finally invalided.	No. sick daily.	Duration of case.
LOCAL INJURIES—*cont.* (iii) *Upper Extremity.*				No.	Days.					No.	Days.				No.	Days.
Contusions and wounds	4·5	—	—	3·5	13·7	7·5	0·13	0·13	0·13	2·6	16·4	5·3	0·03	0·03	6·2	14·8
Gunshot wounds	0·0	—	0·05	0·3	115·0	0·3	—	—	—	0·3	51·0	0·1	—	0·03	0·6	72·3
Burns and scalds	0·7	—	—	0·4	10·3	0·9	—	—	—	0·2	11·9	0·7	—	—	0·6	10·8
Fractures	4·1	—	0·14	6·8	28·6	6·4	—	0·51	0·13	5·1	37·5	4·7	—	0·14	12·0	31·9
Dislocations	0·3	—	—	0·4	19·7	1·0	—	0·13	—	1·3	61·1	0·5	—	—	1·7	41·8
Sprains	0·8	—	—	0·7	15·8	1·5	—	—	—	0·4	11·2	1·0	—	—	1·1	13·9
Other injuries	0·4	—	—	0·3	11·0	0·4	—	—	—	0·1	13·7	0·4	—	—	0·4	11·7
(iv) TOTAL — *Upper Extremity*	10·8	—	0·19	12·4	19·9	18·0	0·13	0·76	0·25	10·1	26·2	12·8	0·03	0·21	22·5	22·3
(v) TOTAL — *Hand and Wrist*	5·9	—	0·14	6·0	17·4	8·8	—	0·13	—	4·0	21·4	6·7	—	0·10	10·0	18·8
(vi) TOTAL—*Rest of Limb*	4·9	—	0·05	6·4	22·9	9·2	0·13	0·64	0·25	6·1	30·7	6·0	0·03	0·10	12·5	26·1

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(vii) *Lower Extremity.*																
Contusions and wounds -	5·4	—	—	4·7	15·1	13·4	—	—	—	3·7	12·9	7·6	—	—	8·4	14·1
Gunshot wounds - -	—	—	—	—	—	0·8	0·13	—	—	0·2	13·5	0·2	0·03	—	0·2	13·5
Burns and scalds - -	0·7	—	—	0·7	17·1	1·1	—	—	—	0·4	15·6	0·8	—	—	1·1	16·5
Fractures - - -	2·2	—	0·05	9·3	73·6	1·9	—	0·25	0·13	2·5	60·6	2·1	—	0·07	11·8	70·4
Dislocations - - -	0·2	—	—	0·2	22·5	—	—	—	—	—	—	0·1	—	—	0·2	22·5
Sprains - - - -	9·0	—	—	7·2	13·8	—	—	0·13	0·13	—	—	6·6	—	0·03	7·2	13·8
Other injuries - - -	7·8	—	—	7·1	15·8	22·7	—	0·13	0·13	6·9	14·1	11·8	—	0·03	14·0	14·9
(viii) TOTAL—*Lower Extremity* - -	25·3	—	0·05	29·3	20·0	39·9	0·13	0·51	0·38	13·7	15·9	29·2	0·03	0·14	42·9	18·5
(ix) TOTAL—*Foot and Ankle* - - -	10·7	—	—	8·5	13·9	20·4	—	0·13	0·13	5·7	13·1	13·3	—	0·03	14·3	13·5
(x) TOTAL—*Knee* -	9·2	—	—	9·5	18·0	9·2	—	0·13	0·13	3·3	16·7	9·2	—	0·03	12·8	17·6
(xi) TOTAL — *Rest of Limb* - - -	5·4	—	0·05	11·2	35·8	10·3	0·13	0·25	0·13	4·6	21·0	6·7	0·03	0·10	15·8	29·6
*TOTAL — ALL LOCAL INJURIES - 1922 -	47·4	0·52	0·43	50·5	18·5	72·8	1·65	1·78	0·89	30·2	19·3	54·4	0·83	0·55	80·7	18·8
1921 -	*55·5*	*0·27*	*0·41*	*70·7*	*21·2*	*70·6*	*0·47*	*1·57*	*0·47*	*26·6*	*21·5*	*58·9*	*0·32*	*0·43*	*97·2*	*21·3*
*TOTAL—ALL INJURIES - 1922 -	51·2	1·57	0·47	55·7	18·8	104·0	6·25	2·17	0·89	38·2	17·0	65·5	2·83	0·59	93·8	18·1
1921 -	*61·1*	*2·92*	*0·50*	*75·6*	*20·6*	*91·4*	*4·54*	*2·04*	*0·63*	*31·1*	*19·4*	*67·9*	*3·28*	*0·53*	*106·7*	*20·2*
*TOTAL—ALL DISEASES - 1922 -	331·3	0·95	17·37	346·7	18·1	763·1	2·80	18·21	6·88	270·3	16·5	448·5	1·46	14·52	616·9	17·4
1921 -	*322·8*	*1·00*	*9·44*	*381·1*	*19·6*	*796·2*	*2·98*	*24·74*	*5·64*	*267·7*	*19·2*	*429·4*	*1·45*	*8·58*	*648·8*	*19·5*
*TOTAL—ALL DISABILITIES 1922 -	382·5	2·51	17·84	402·4	18·2	867·2	9·04	20·38	7·77	308·4	16·5	514·0	4·29	15·11	710·8	17·4
1921 -	*383·8*	*3·92*	*9·94*	*456·7*	*19·8*	*887·6*	*7·52*	*26·76*	*6·26*	*298·8*	*19·2*	*497·3*	*4·70*	*9·11*	*755·4*	*19·6*

N.B.—For "United Kingdom," the ratio 0·05 = one case per 1,000 of strength; for "Abroad," the ratio 0·13 = one case per 1,000 of strength; for "Total Force," the ratio 0·03 = one case per 1,000 of strength.

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TABLE X.—NOSOLOGICAL TABLE BY GEOGRAPHICAL AREAS

Disease.	United Kingdom. Average strength, 21,074.					Mediterranean Littoral. Average strength, 3,768.					
	Ratio per 1,000 of average strength.			Averages.		Ratio per 1,000 of average strength.				Averages.	
	Cases.	Deaths.	Finally invalided.	No. sick daily.	Duration of case.	Cases.	Deaths.	Invalided to United Kingdom.	Finally invalided.	No. sick daily.	Duration of case.
Communicable Diseases.											
Dysentery—					Days.						Days.
Clinical, primary	—	—	—	—	—	8·2	—	—	—	1·5	18·0
„ recurrent	—	—	—	—	—	1·1	—	—	—	0·3	25·7
Bacillary, primary	—	—	—	—	—	2·9	—	—	—	1·0	33·1
„ recurrent	—	—	—	—	—	0·3	—	—	—	0·3	94·0
Amœbic, primary	—	—	—	—	—	1·3	—	—	—	0·6	47·0
„ recurrent	0·4	—	—	1·4	63·2	0·8	—	0·53	—	0·5	60·3
TOTAL—Dysentery	0·4	—	—	1·4	63·2	14·6	—	0·53	—	4·2	27·8
Enteric fever	—	—	—	—	—	1·1	—	—	—	0·7	67·2
Paratyphoid	—	—	—	—	—	0·8	—	—	—	0·4	49·3
Enteritis	2·5	—	—	1·2	8 1	32·4	—	—	—	2·7	8·0
Influenza	50·9	—	—	27·0	9·2	19·4	—	—	—	1·4	7·2
Malaria—											
Clinical, primary	—	—	—	—	—	4·8	—	—	—	0·6	11·8
„ recurrent	1·1	—	—	1·0	15·2	9·0	—	—	—	0·7	7·6
Benign tertiary, primary	—	—	—	—	—	3·5	—	—	—	0·9	25·8
„ „ recurrent	1·9	—	—	1·9	17·1	6·6	—	—	—	1·4	20·6
Quartan, primary and recurrent	—	—	—	—	—	—	—	—	—	—	—
Malignant tertian, primary	—	—	—	—	—	—	—	—	—	—	—
„ „ recurrent	0·3	0·05	—	0·8	40·4	0·8	—	0·27	—	0·6	67·7
Cachexia	—	—	—	—	—	—	—	—	—	—	—
TOTAL—Malaria	3·3	0·05	—	3·6	18·8	24·7	—	0·27	—	4·2	16·4
Pyrexia of unknown origin	1·7	—	—	0·6	6·3	8·0	—	—	—	1·7	20·5
Sandfly fever	—	—	—	—	—	100·6	—	—	—	6·4	6·2
Scabies	8·4	—	—	5·5	11·5	4·5	—	—	—	0·4	7·6
Tuberculosis	2·9	0·19	2·23	8·6	51·5	1·1	—	0·53	0·80	1·1	102·7
Upper air passage infections	67·1	—	—	31·6	8·2	117·6	—	—	—	8·6	7·1
Venereal disease, primary	17·2	—	0·09	55·4	55·8	30·8	—	—	—	17·6	55·4
„ „ other	7·7	—	—	20·7	46·4	9·8	—	0·27	—	4·6	45·8
TOTAL—Venereal disease	24·9	—	0·09	76·1	52·9	40·6	—	0·27	—	22·2	53·1
Other communicable diseases	25·5	0·19	0·05	34·5	23·4	22·3	0·27	2·12	0·27	6·1	26·5
Other diseases	143·8	0·52	14·99	156·6	18·9	215·2	1·86	5·31	4·51	42·3	19·1
All diseases	331·3	0·95	17·37	346·7	18·1	602·7	2·12	9·02	5·57	102·4	16·5
General injuries	3·8	1·04	0·05	5·1	23·8	24·4	0·53	0·27	—	3·0	11·9
Local injuries	47·4	0·52	0·43	50·5	18·5	62·4	1·33	1·86	0·80	12·2	19·0
All injuries	51·2	1·57	0·47	55·7	18·8	86·8	1·86	2·12	0·80	15·2	17·0
TOTAL—All disabilities	382·5	2·51	17·84	402·4	18·2	689·5	3·98	11·14	6·37	117·7	16·5

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FOR DISEASES STARRED (*) IN TABLE IX (PAGES 14 to 27).

Iraq. Average strength, 2,381.						India. Average strength, 1,703.						Total. Average strength, 28,926.				
Ratio per 1,000 of average strength.				Averages.		Ratio per 1,000 of average strength.				Averages.		Ratio per 1,000 of average strength.			Averages.	
Cases.	Deaths.	Invalided to United Kingdom.	Finally invalided.	No. sick daily.	Duration of case.	Cases.	Deaths.	Invalided to United Kingdom.	Finally invalided.	No. sick daily.	Duration of case.	Cases.	Deaths	Finally invalided.	No. sick daily.	Duration of case.
					Days.						Days.				*	Days.
9·7	—	0·42	—	1·4	22·1	7·0	—	—	—	0·5	16·0	2·3	—	—	3·4	19·0
0·4	—	—	—	0·0	2·0	2·9	—	—	—	0·2	11·4	0·4	—	—	0·5	17·2
1·7	—	—	—	0·5	42·0	—	—	—	—	—	—	0·5	—	—	1·5	35·5
—	—	—	—	—	—	—	—	—	—	—	—	0·0	—	—	0·3	94·0
16·0	—	0·84	—	4·9	47·5	8·2	—	—	—	0·9	22·3	2·0	—	—	6·4	41·3
7·6	0·42	2·10	0·42	3·5	70·2	3·5	—	0·59	0·59	0·9	57·5	1·2	0·03	0·07	6·3	65·7
35·3	0·42	3·36	0·42	10·3	44·6	21·7	—	0·59	0·59	2·5	24·5	6·4	0·03	0·07	18·3	36·4
4·2	—	0·42	—	2·4	85·8	1·2	—	—	—	0·4	64·5	0·6	—	—	3·4	78·5
0·8	0·42	—	—	0·1	19·5	2·9	—	—	—	0·8	54·8	0·4	0·03	—	1·3	46·1
77·3	—	—	—	3·9	7·7	17·0	—	—	—	0·7	9·1	13·4	—	—	8·5	8·0
2·9	—	—	—	0·2	8·9	4·7	—	—	—	0·2	10·5	40·1	—	—	28·8	9·1
8·0	—	—	—	1·4	26·9	24·1	—	—	—	1·0	9·1	2·7	—	—	3·0	14·2
4·2	—	—	—	0·3	12·6	27·6	—	—	—	0·9	6·9	3·9	—	—	2·9	9·3
27·3	—	—	—	3·2	17·8	32·9	—	—	—	1·1	7·2	4·6	—	—	5·2	14·1
17·6	—	1·68	—	2·9	25·5	78·7	—	1·76	—	4·0	11·0	8·3	—	—	10·2	15·5
—	—	—	—	—	—	0·6	—	—	—	0·0	11·0	0·0	—	—	0·0	11·0
3·4	—	0·42	—	0·7	31·0	11·2	—	—	—	0·5	9·1	0·9	—	—	1·2	15·6
2·9	—	0·42	—	0·5	26·9	20·6	—	1·17	—	1·9	19·6	1·8	0·03	—	3·7	26·2
—	—	—	—	—	—	0·6	—	—	—	—	15·0	0·0	—	—	—	15·0
63·4	—	2·52	—	9·0	21·8	196·1	—	2·94	—	9·5	10·3	22·4	0·03	—	26·3	14·8
7·1	—	—	—	0·9	19·3	7·0	0·59	—	—	0·2	6·6	3·2	0·03	—	3·4	13·2
565·3	—	—	—	31·9	8·7	50·5	—	—	—	1·5	6·2	62·6	—	—	39·8	8·0
2·1	—	—	—	0·2	12·4	—	—	—	—	—	—	6·8	—	—	6·0	11·1
2·1	0·42	0·84	1·26	2·7	194·6	0·6	—	0·59	0·59	0·4	141·0	2·5	0·17	1·87	12·8	65·7
81·5	—	—	—	4·1	7·7	51·1	—	—	—	2·3	9·6	73·9	—	—	46·6	8·0
13·9	—	0·42	—	2·9	32·6	25·8	—	—	—	5·9	48·9	19·2	—	0·07	81·8	53·8
4·2	—	—	—	0·9	33·6	13·5	—	0·59	—	2·4	37·9	8·1	—	—	28·7	44·9
18·1	—	0·42	—	3·9	32·8	39·3	—	0·59	—	8·3	45·1	27·2	—	0·07	110·5	51·2
30·7	0·84	0·84	—	4·6	22·9	28·2	—	—	—	3·6	27·7	25·7	0·24	0·07	48·8	24·0
248·6	1·68	17·22	4·20	39·5	24·4	171·5	2·35	23·49	9·98	24·0	30·0	163·4	0·90	12·45	262·3	20·3
1139·4	3·78	25·62	5·88	113·5	15·3	591·9	2·94	28·19	11·16	54·3	19·6	448·5	1·46	14·52	616·9	17·4
53·3	8·82	—	—	4·2	12·0	15·3	7·63	1·17	—	0·8	11·5	11·2	2·01	0·03	13·1	14·8
100·0	1·68	2·10	1·26	12·8	19·6	58·1	2·35	1·17	0·59	5·1	19·0	54 3	0·83	0·55	80·7	18·8
153·3	10·50	2·10	1·26	17·0	17·0	73·4	9·98	2·35	0·59	5·9	17·4	65·5	2·83	0·59	93·8	18·1
1292·7	14·28	27·72	7·14	130·5	15·5	665·3	12·92	30·54	11·75	60·2	19·4	514·0	4·29	15·11	710·8	17·4

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CHAPTER II.—THE HEALTH OF THE ROYAL AIR FORCE IN THE UNITED KINGDOM DURING 1922.

General.

1. Details of sickness in the United Kingdom are shown in Table I, page 3. As explained in Chapter I, two small units serving with the Rhine Army are included in the United Kingdom figures. Compared with 1921, the case incidence per 1,000 of strength of fresh admissions, both including and excluding cases of 48 hours duration or less, deaths, number sick daily, average duration of each case, and average number of days sickness per head per annum all show a reduction. Reference has already been made in Chapter I to the apparent increase in the invaliding rate.

2. Chart I, facing page 2, gives the monthly case incidence of sickness in ratios per 1,000 of strength in the United Kingdom, during 1921 and 1922. The January peak was due to the mild influenza epidemic, and, to a less extent, to a concurrent increase in upper air passage infections.

3. Table XI, page 31, shows details of sickness at the stations with a strength of 500 or over during 1922.

Diseases calling for Special Mention.

4. The decrease in the case incidence of scabies per 1,000 of strength from 14·3 in 1921 to 8·4 in 1922 was satisfactory. The duration of each case was slightly higher at 11·5 days compared with 10·3 days in 1921. The prolonged use of sulphur ointment appears to be the chief contributory factor to the longer duration. The case incidence of impetigo contagiosa shows a reduction from 14·5 in 1921 to 12·1 during 1922. The average duration of each case in days remained unchanged. The case rate of influenza increased from 26·4 in 1921 to 50·9 during 1922. Concurrently with the rise in incidence amongst the civil population during January, epidemics occurred throughout the Air Force in the United Kingdom. The disease was of a mild respiratory type, except at Halton, where the abdominal type predominated. There were no deaths. The duration of each case was slightly longer at 9·2 days, as compared with 8·5 days in 1921. Seventy-two cases of scarlet fever were reported at home, all of a mild type. Forty cases occurred at Cranwell amongst boys, chiefly during January and June. Twelve cases occurred, also among boys at Halton, during March. The remaining cases were sporadic. Fifty-two cases of gastro-enteritis were reported from the United Kingdom; of these 32 occurred amongst a section of boys at Halton on 14th May. The symptoms were mild and suggestive of an illness due to food. Investigation proved that the food supplied for that day had become tainted, the weather being excessively hot. In July, a further 14 cases occurred at the same station, also amongst boys, after a meal of tinned meat, the meat being beef, ham or veal loaf. Analysis did not point to any particular tin as being the cause, but it

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was found that the whole supply from the canteen was old stock and of inferior quality. Seventy admissions for recurrent malaria were reported, representing a case rate of 3·3 per 1,000 of strength as compared with 3·7 during 1921. Types are shown in Table X, page 28. One case of encephalitis lethargica occurred at Halton in February. There were no cases of typhoid or paratyphoid A and B.

TABLE XI.—SICKNESS AT PRINCIPAL STATIONS AT HOME, 1921 AND 1922.

Station.		Average Strength.	Ratios per 1,000 of strength.		
			Cases of sickness.		Deaths.
			Including 48-hour cases.	Excluding 48-hour cases.	
Calshot	1922	526	433·5	290·9	1·9
	1921	*469*	*460·6*	*232·4*	—
Cranwell	1922	2,283	903·6	440·2	2·6
	1921	*1,973*	*920·9*	*637·1*	*1·5*
Flowerdown	1922	823	599·0	390·0	1·2
	1921	*851*	*672·2*	*323·1*	*1·2*
Grain, Isle of	1922	605	882·6	400·0	3·3
	1921	*499*	*561·1*	*286·6*	*4·0*
Halton	1922	3,214	489·4	393·0	1·2
	1921	*2,952*	*411·9*	*275·4*	*1·0*
Henlow	1922	1,122	759·4	492·9	1·8
	1921	*1,243*	*858·4*	*458·6*	*4·0*
Manston	1922	1,526	733·9	494·1	3·9
	1921	*1,558*	*726·6*	*437·1*	*3·9*
Netheravon	1922	546	591·6	274·7	—
	1921	*557*	*816·9*	*319·6*	—
Shotwick	1922	539	486·1	302·4	9·3
	1921	*353*	*657·2*	*337·1*	—
Uxbridge	1922	2,627	1,081·5	370·4	1·5
	1921	*2,926*	*1,763·8*	*317·5*	*1·0*

CHAPTER III.—THE HEALTH OF THE ROYAL AIR FORCE ABROAD DURING 1922.

General.

1. Table I, page 3, shows sickness figures in each geographical area abroad and also for the total force abroad. The corresponding figures and ratios during 1921 are shown in italics. Compared with 1921, the average duration of each case in days, the average number of days sickness per head per annum, the ratio of the number sick daily per thousand of strength for the total abroad, all show a reduction. The ratio of fresh cases of sickness per thousand of strength, including cases of 48 hours duration or less, shows a slight increase on the corresponding ratio for 1921.

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These 48-hour cases have but little effect on the total non-effective rate, as will be seen on reference to the last two columns of the table. Deducting them, the ratio per thousand of strength of fresh cases of sickness is 867·2, compared with 887·6 in 1921. The death ratio has increased from 7·5 in 1921 to 9·0 in 1922.

2. In the individual areas the chief point of interest is the all round reduction of sickness in India during 1922. The monthly case incidence of sickness abroad in ratios per thousand of strength during 1921 and 1922 is shown in Chart I, facing page [illegible]. Chart IV, opposite, further analyses Chart I, showing the monthly case incidence ratios of sickness in the Mediterranean Littoral, Iraq and India during 1922, and for the total abroad in 1921 and 1922. From Chart IV, it will be seen that the July peak in Chart I is chiefly due to a rise in the sickness ratios in Iraq, and to a much less extent in the Mediterranean Littoral and India. The increase in Iraq was almost entirely due to sandfly fever, to which further reference is made in para. 4, below.

3. Table XII, below, shows details of sickness in the principal stations abroad.

TABLE XII.—SICKNESS AT PRINCIPAL STATIONS ABROAD, 1921 AND 1922.

Abbassia - - -	1922	927	1,749·7	926·6	4·3
Cairo - - - -	*1921*	*860*	*2,297·7*	*848·8*	*7·0*
Heliopolis - - -					
Aboukir - - - -	1922	708	755·7	382·8	2·8
	1921	*804*	*823·4*	*536·1*	*·7*
Baghdad - - -	1922	1,022	4,688·8	1,471·6	6·6
	1921	*861*	*2,391·4*	*996·5*	*8·1*
Hinaidi - - - -	1922	815	1,857·7	1,162·0	19·6
	1921	—	—	—	—
Karachi - - - -	1922	465	1,967·7	655·9	2·2
	1921	*302*	*6,251·7*	*2,003·3*	*6·6*

Diseases calling for Special Mention.

4. *Sandfly fever.*—Table XIII shows the monthly case incidence of sandfly fever by geographical areas abroad during 1922; the corresponding monthly ratios during 1921 are also included for comparison. In Malta and in India the yearly case rate shows a substantial reduction compared with 1921. The highest monthly ratio in Malta occurred in June, in India during May. The yearly case rate in Egypt and Palestine shows a large increase on the rate for 1921, the rate every month being higher than in the corresponding month for 1921, the maximum being reached during July. Exclusive of 48-hour cases, sandfly fever accounted for nearly one half of the sickness in Iraq, the annual case rate per 1,000 of strength being 565·3, compared with 236·4 in 1921. Table XIV shows the case incidence of sandfly fever at stations abroad. Chart V shows the monthly case incidence in ratios per 1,000 of strength of sandfly fever in Iraq during 1920, 1921 and 1922. It will be noticed that the maximum points of the graphs occur in May,

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To face page 32.

CHART IV. MONTHLY CASE INCIDENCE OF SICKNESS IN RATIOS PER 1000 OF STRENGTH FOR GEOGRAPHICAL AREAS ABROAD IN 1922 AND FOR THE TOTAL ABROAD IN 1921.

CASES OF 48 HOURS DURATION OR LESS ARE EXCLUDED.

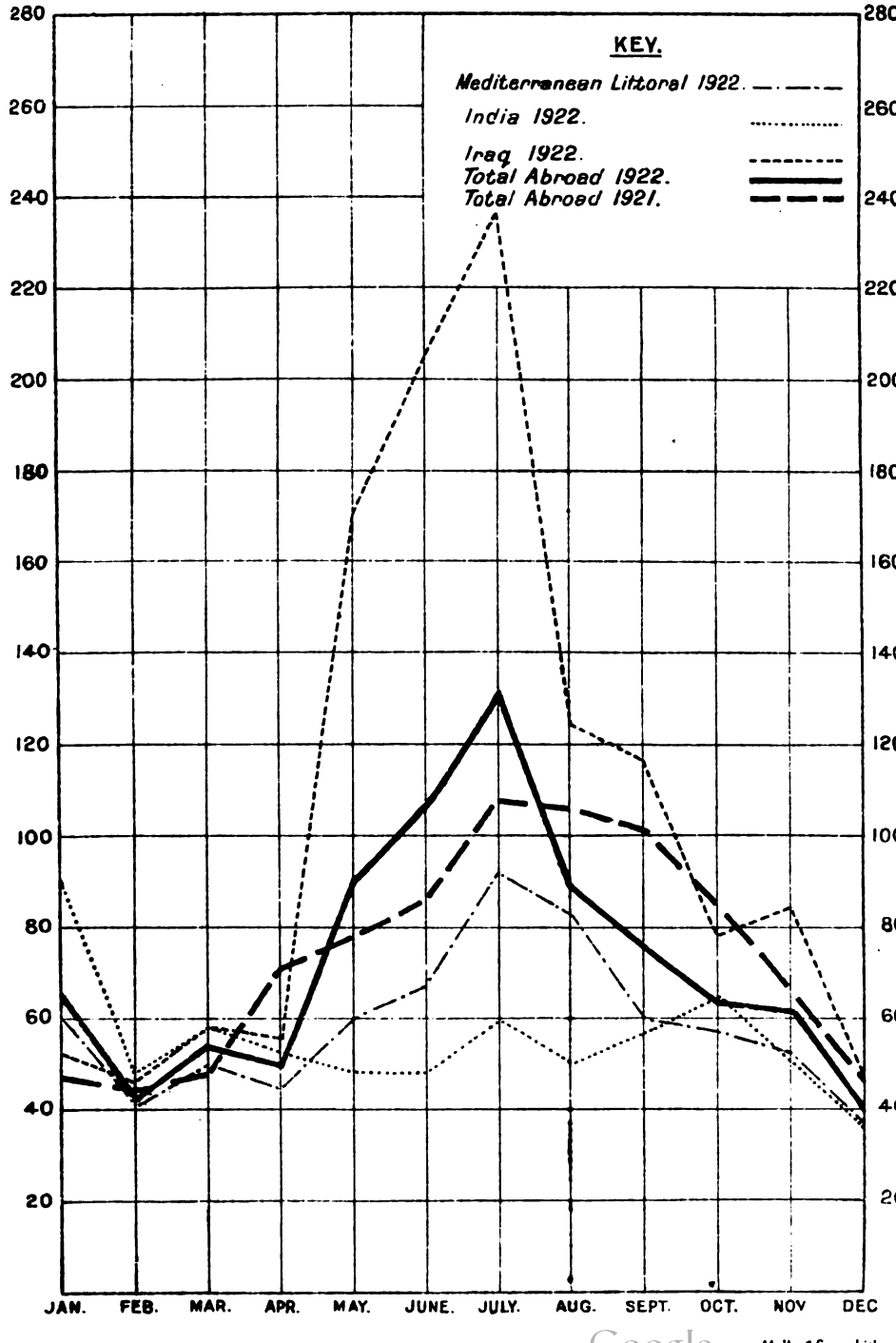

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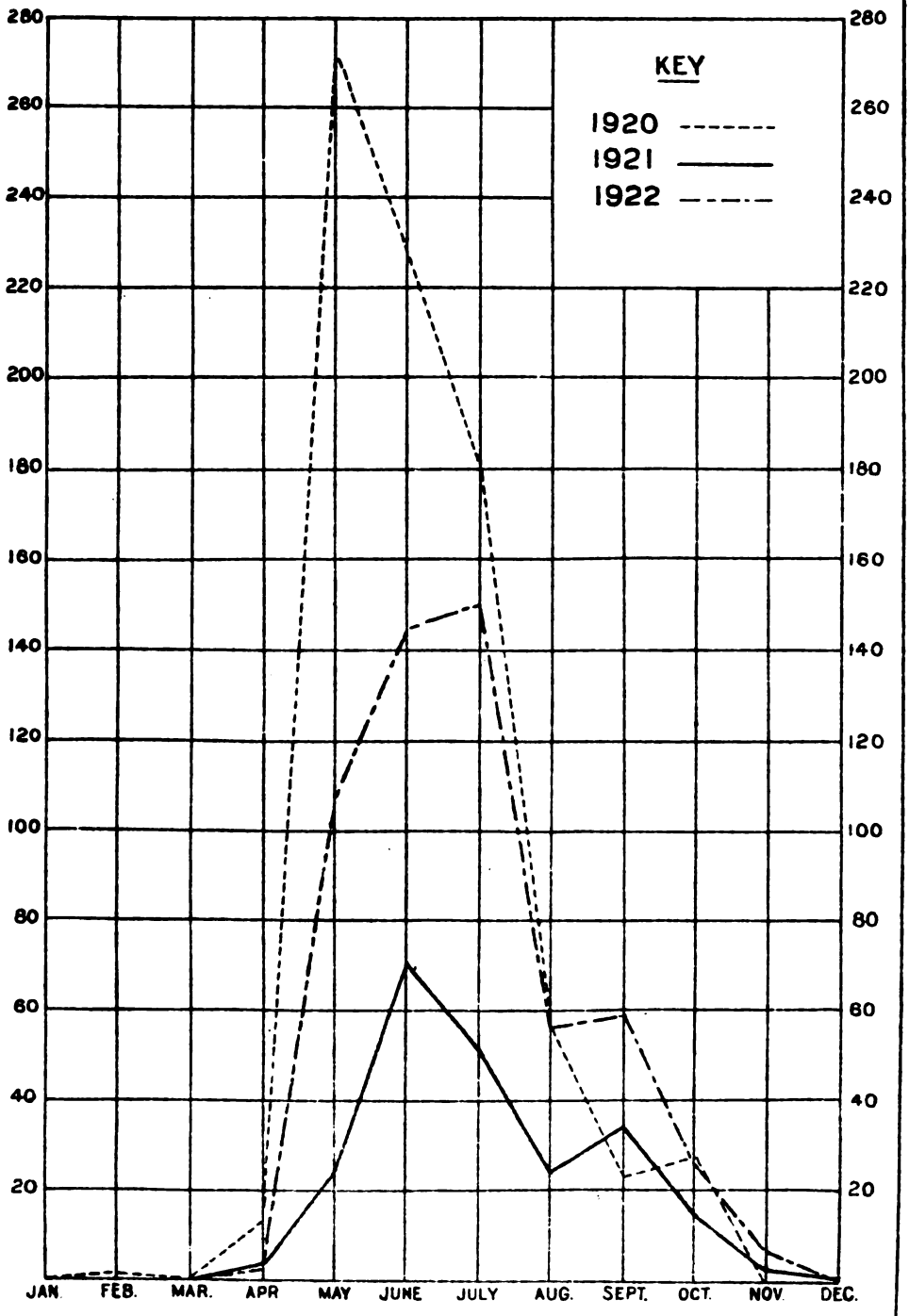
CHART V. MONTHLY CASE INCIDENCE OF SAND-FLY FEVER IN IRAQ, IN RATIOS PER THOUSAND OF STRENGTH DURING 1920, 1921 & 1922.



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June and July respectively, with lesser outbreaks in September, 1921 and 1922, and in October 1920. The report of the investigations of the R.A.F. Sandfly Fever Commission in Malta during the year is contained in Chapter V, page 64. Research work on sandfly fever was also carried out at Baghdad in a temporary laboratory improvised from an aeroplane packing-case. Acting on the suggestions of the Sandfly Fever Commission, an attempt was made to ascertain the probable breeding place of the fly. The experiments proved successful; flies hatched out in a specially constructed trap which was erected in a sump connected with a bath house. Flies were also raised in a second trap in a brick-lined sump situated close to a cookhouse. Material was obtained from the latter position and placed in a specially constructed box, moistened from time to time and kept in a dug-out where the conditions approximated to those attained in the natural trap. Flies were also bred out by this method. Frequent and careful examination of the material failed to reveal either eggs or larvæ. Experiments on volunteers with the flies so obtained proved unproductive, chiefly owing to the difficulty of finding a sandfly-free building in which the volunteers could be housed. Solutions of various disinfectants were tested to ascertain their lethal effects on the flies. Cresol was again found to be the most effective, paraffin to a less extent. Although many attempts were made no *leptospira* were found either in the fly or in the blood of sandfly-fever patients. This may in part be due to the unsatisfactory laboratory in which the work was carried out. Differential blood counts in the first three days of the fever agreed with those carried out in the previous year, and showed a *leucopenia* followed on the third and successive days by an increase in the large and small lymphocytes with a corresponding decrease in neutrophil and polymorphoneuclear leucocytes.

5. *Malaria.*—Table XV shows the monthly case incidence of malaria in geographical areas abroad. Primary cases and all cases are shown for each area. The case ratios per thousand of strength for 1921 and 1922 are given at the foot of the table. The total case ratio per thousand of strength overseas was 73·6 in 1922, compared with 122·9 in 1921, the primary rates being 30·6 and 54·2 respectively in the two years. In Egypt and Palestine, the total case incidence rate increased from 24·6 in 1921 to 29·5 in 1922, and the primary rate from 6·8 to 8·9. In Iraq, the total rate fell from 78·8 in 1921 to 63·4 in 1922, although the primary rate increased from 11·7 to 38·6. There was a marked reduction in both the total rate and primary rate in India during the year, the former falling from 337·6 in 1921 to 196·1 in 1922, the latter from 174·1 to 68·7. Twelve cases, including six of primary malaria, occurred at Constantinople and amongst drafts *en route* to and from areas abroad. Two cases of malaria were reported from Malta, one being primary, of the typho-malarial type. Table XVI shows the case incidence of Malaria, divided into primary and all cases, in stations abroad.

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Table XIII.—Monthly Case Incidence of Sandfly Fever Abroad.

Month.	Malta.			Egypt and Palestine.			Iraq.			India.		
	No. of cases, 1922.	Ratio per 1,000.		No. of cases, 1922.	Ratio per 1,000.		No. of cases, 1922.	Ratio per 1,000.		No. of cases, 1922.	Ratio per 1,000.	
		1922.	1921.		1922.	1921.		1922.	1921.		1922.	1921.
January	—	—	—	—	—	0·4	—	—	0·4	1	0·6	—
February	—	—	—	—	—	—	—	—	—	1	0·6	0·5
March	—	—	—	—	—	—	—	—	—	5	3·1	9·2
April	—	—	—	2	0·7	0·4	7	3·1	4·0	16	9·3	41·4
May	—	—	—	50	17·7	1·9	250	107·3	25·4	24	13·5	19·9
June	30	61·1	20·4	38	13·9	7·4	345	145·8	71·0	8	4·6	7·4
July	18	37·8	131·1	72	26·5	6·3	369	150·0	52·1	7	4·0	9·2
August	2	4·3	66·0	66	24·4	6·5	144	57·6	25·6	4	2·3	17·1
September	3	6·6	39·1	43	16·2	1·9	150	59·2	35·7	13	7·5	34·0
October	3	6·9	5·2	36	14·2	4·2	64	26·2	15·7	5	2·9	24·0
November	1	2·5	—	9	3·6	2·0	17	6·0	2·1	1	0·6	7·1
December	—	—	—	—	—	0·4	—	—	0·7	1	0·6	0·5
Total	57	119·7	245·4	316	117·8	32·2	1,346	565·3	236·4	86	50·5	164·6

One case occurred in March and five in April amongst drafts *en route*.

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Table XIV.—Case Incidence of Sandfly Fever at Stations Abroad.

Mediterranean Littoral.			Iraq.			India.		
Stations.	Average strength.	No. of cases.	Stations.	Average strength.	No. of cases.	Stations.	Average strength.	No. of cases.
Aboukir	708	21	Baghdad	1,022	627	Ambala	241	15
Abbassia, Cairo and Heliopolis	927	72	Basrah	202	17	Karachi	465	15
Abu Sueir	311	27	Hinaidi	815	546	Kohat	85	8
Amman	103	19	Magil	126	23	Lower Barian	119	1
Helwan	132	16	Mosul	216	133	Parachinar	105	5
Jerusalem	57	7				Peshawar	138	31
Malta	389	57				Risalpur	263	11
Moascar	174	31				Other stations	287	—
Ramleh	118	60						
Other stations and drafts *en route*	849	69						
Totals	3,768	379		2,381	1,346		1,703	86

"Other Stations" includes all stations of an average strength not exceeding 50 and also all stations where no sandfly fever occurred.

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Further detailed figures dealing with the different types of malaria are given in Table IX, page 4, and in Table X, page 28.

TABLE XV.—MONTHLY CASE INCIDENCE OF MALARIA ABROAD.

Month.	Egypt and Palestine.		Iraq.		India.		Malta, Constantinople, and drafts *en route*.	
	Primary cases. No.	All cases. No.	Primary cases. No.	All cases. No.	Primary cases. No.	All cases. No.	Primary cases. No.	All cases. No.
January	—	2	1	2	2	21	2	2
February	—	1	1	3	—	8	1	2
March	—	2	—	3	—	11	—	—
April	1	3	8	10	4	17	—	1
May	—	5	9	13	7	22	—	—
June	2	6	14	22	9	26	—	—
July	3	12	14	21	19	46	1	1
August	7	17	10	17	14	30	—	—
September	5	12	1	5	22	47	1	2
October	2	7	6	10	27	51	1	1
November	2	9	21	32	11	37	1	3
December	2	3	7	13	2	18	—	2
Total	24	79	92	151	117	334	7	14
Case ratios per 1,000 per annum:								
1922	8·9	29·5	38·6	63·4	68·7	196·1	6·4	12·9
1921	*6·8*	*24·6*	*11·7*	*78·8*	*174·1*	*337·6*	*Nil*	

Total abroad case ratios per 1,000 per annum: all cases, 1922, 73·6; *1921, 122·9.*

6. An investigation into the value of "914" in the treatment of chronic and relapsing cases of malaria was carried out at the Hill Depôt at Lower Barian (India) during the period April–October. Each party was thoroughly examined on arrival, and all cases showing chronic malaria were picked out and put on special treatment in the convalescent section or on attendance with light duty. From April to August all cases of malaria, whether associated with anæmia or not, were given a combined course of quinine and "914." The results obtained were suggestive that—

(i) Relapses were much less frequent, even in chronic cases with anæmia and enlarged spleen.

(ii) That the general tonic effect was good.

(iii) That in some cases "914" induced a relapse a few hours after injection, and that after the relapse the case recovered rapidly.

(iv) Cases with marked anæmia and enlarged spleen showed marked improvement.

Further research is being carried out, but it is impossible at this stage to draw any definite conclusions.

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Table XVI.—Case Incidence of Malaria in Stations Abroad.

Mediterranean Littoral.				Iraq.				India.			
Station.	Average strength.	Cases.		Station.	Average strength.	Cases.		Station.	Average strength.	Cases.	
		Primary No.	All No.			Primary No.	All No.			Primary No.	All No.
Aboukir - -	708	2	8	Baghdad - -	1,022	18	39	Ambala - -	241	22	34
Abbassia, Cairo and Heliopolis	927	1	16	Basrah - -	202	8	16	Karachi - -	465	35	95
Abu Sueir -	311	1	8	Hinaidi - -	815	6	16	Kohat - -	85	5	13
Amman - -	103	1	4	Magil - -	126	44	61	Lahore - -	103	7	27
Jerusalem -	57	2	3	Mosul - -	216	16	19	Lower Barian -	119	3	11
Malta - -	389	1	2					Parachinar -	105	11	24
Moascar - -	174	3	8					Peshawar -	138	12	64
Ramleh - -	118	8	21					Quetta - -	168	6	11
Other stations and drafts *en route* - -	981	12	23					Risalpur - -	263	15	48
								Other stations -	16	1	7
Total -	3,768	31	93	Total -	2,381	92	151	Total -	1,703	117	334

"Other Stations" includes all stations of an average strength not exceeding 50, and also all stations where no malaria occurred.

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7. *Dysentery.*—Table XVII shows the monthly case incidence of dysentery, divided into primary and all cases, for each geographical area abroad. Case ratios per thousand of strength per annum for the years 1921 and 1922 are also included in the table. The total overseas case ratio per thousand of strength per annum has fallen from 38·5 in 1921 to 22·4 in 1922, the primary rate from 26·9 to 17·6. From the table it will be seen that in each area abroad, both the total rate and the primary rate have been reduced during 1922, compared with the corresponding ratios for 1921. Table XVIII gives the case incidence of all types of dysentery the primary cases being shown separately. In the Mediterranean Littoral, bacillary dysentery was again the prevailing type and, as in 1921, the comparatively few recurrences among the clinical dysenteries in this area is suggestive that the majority of them were also bacillary in origin. Seventeen cases from a total of 55 occurred at Aboukir, where the water supply was not above suspicion. Sixteen cases occurred at Abbassia, Cairo, and Heliopolis. The remaining 22 cases were scattered fairly uniformly through various other stations. In Iraq, the predominant type remained the same, *i.e.*, protozoal, only four cases from a total of 84 being bacillary. Baghdad and Hinaidi accounted for 56 cases, Mosul for 17. Thirty-seven cases were reported from India, 20 being protozoal in origin. Thirteen cases occurred at Ambala, 8 at Karachi, the remaining cases being scattered amongst other stations.

TABLE XVII.—MONTHLY CASE INCIDENCE OF DYSENTERY ABROAD.

Month.	Mediterranean Littoral.		Iraq.		India.	
	Primary cases. No.	All cases. No.	Primary cases. No.	All cases. No.	Primary cases. No.	All cases. No.
January	—	—	1	2	2	3
February	1	1	—	1	1	1
March	3	4	—	—	2	4
April	1	1	5	6	7	7
May	11	13	8	11	1	3
June	3	3	6	10	1	3
July	2	5	7	10	2	3
August	9	9	10	11	1	2
September	3	4	12	14	3	3
October	7	7	6	7	4	5
November	7	7	5	6	1	1
December	—	1	5	6	1	2
Total	47	55	65	84	26	37
Case ratios per 1,000 per annum:—						
1922	12·5	14·6	27·3	35·3	15·3	21·7
1921	*14·8*	*17·5*	*60·8*	*78·8*	*25·0*	*48·4*

Total abroad case ratios per 1,000 per annum:—1922, 22·4; *1921, 38·5.*

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Table XVIII.—Case Incidence of Dysentery in Stations Abroad.

Station.	Average strength.	Clinical.		Bacillary.		Protozoal.		Total.	
		Primary cases.	All cases.	Primary cases.	All cases.	Primary cases.	All cases.	Primary cases.	All cases.
		No.	No.	No.	No.	No.	o.	No.	No.
Mediterranean Littoral.									
Aboukir	708	12	13	2	2	2	2	16	17
Abbassia, Cairo, and Heliopolis	927	7	7	5	5	1	4	13	16
Abu Sueir	311	1	1	1	1	–	–	2	2
Amman	103	1	1	–	–	–	–	1	1
Helwan	132	–	–	1	1	–	–	1	1
Jerusalem	57	1	1	–	–	–	–	1	1
Kelia	54	2	2	2	2	–	–	4	4
Moascar	174	–	1	–	–	–	–	–	1
Ramleh	118	4	5	–	–	1	1	5	6
San Stephano	83	1	2	–	–	–	–	1	2
Others stations and drafts *en route*	1,101	2	2	–	1	1	1	3	4
Totals	3,768	31	35	11	12	5	8	47	55
Iraq.									
Baghdad	1,022	10	10	–	–	15	24	25	34
Basrah, Shaibah and Makina	202	2	2	2	2	3	3	7	7
Hinaidi	815	7	7	1	1	7	14	15	22
Magil	126	–	–	1	1	2	3	3	4
Mosul	216	4	5	–	–	11	12	15	17
Totals	2,381	23	24	4	4	38	56	65	84
India.									
Ambala	241	1	1	–	–	10	12	11	13
Karachi	465	5	7	–	–	–	1	5	8
Kohat	85	2	3	–	–	1	1	3	4
Lahore	103	–	–	–	–	1	1	1	1
Lower Barian	119	1	2	–	–	–	1	1	3
Parachinar	105	1	1	–	–	–	–	1	1
Peshawar	138	1	2	–	–	2	2	3	4
Risalpur	263	1	1	–	–	–	2	1	3
Others stations	184	–	–	–	–	–	–	–	–
Totals	1,703	12	17	–	–	14	20	26	37

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8. During 1922 an investigation into the pathogenicity and treatment of flagellate dysentery was carried out at the R.A.F. Central Laboratory, and the following conclusions reached :—

(i) Flagellate dysentery is a pathogenic condition which if allowed to persist will eventually undermine the health of the patient and cause neurasthenia.

(ii) Certain cases are simply "carriers," as are some cases of *Entamœba histolytica* infection. This in no way proves their non-pathogenicity. Such "carriers" are a great source of danger, inasmuch as they may infect others, especially in a service where they are likely to be drafted abroad.

(iii) Contrary to what is usually stated, flagellate dysentery can be cured in at least fifty per cent. of cases. Stress is laid upon the advisability of the combined treatment by purgation, thymol, emetine bismuthous iodide and lavage of the colon.

(iv) All cases of recurrent diarrhœa or neurasthenia for which no cause can be found, and in whom flagellates can be detected in the stools, should have a course of treatment as outlined above.

9. *Enteric Group.*—Twenty-six cases occurred abroad, resulting in one death and one case invalided to the United Kingdom, compared with thirty-one cases with two deaths and four invalids to the United Kingdom during 1921. Twelve cases were reported from Iraq, seven from India and seven from the Mediterranean Littoral. Of the Iraq cases, ten were typhoid and two paratyphoid A; eight typhoid and two paratyphoid A occurred at Baghdad and Hinaidi. The cases were scattered throughout the year and apparently had no common origin. The remaining two cases were sporadic. Five were stated to be fully and one partly protected by prophylactic inoculation; no details of previous inoculation were given in the remaining seven cases. The fatal case was one of paratyphoid A, complicated by a concurrent attack of malignant malaria. The seven cases in India, consisting of two typhoid, three paratyphoid A, and two paratyphoid B, were sporadic. Five were fully protected, one had never been inoculated, and in the remaining case details of inoculation were lacking. The seven cases reported from the Mediterranean Littoral were sporadic and consisted of four typhoid, two paratyphoid A, and one paratyphoid B. Two were fully protected, two had never been inoculated, and particulars of inoculation were not stated in the remaining three cases.

10. *Other Diseases.*—Nine cases of smallpox, all of which occurred in Iraq, were reported during the year. The disease was of a mild type, and there were no deaths. Of the nine cases, five occurred at Baghdad in the period October to

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December, three at Mosul in September and October, and the remaining case at Shaibah. Of the cases, four had been successfully and three unsuccessfully vaccinated within two years, one had not been vaccinated since infancy, details of vaccination were not stated in the remaining case. In view of the fact that smallpox is endemic amongst the native population in Iraq, the low incidence is satisfactory. One case of bubonic plague with fatal termination occurred at Baghdad. Extensive anti-rat measures were carried out and no further cases were reported.

11. *Heatstroke, Sunstroke and Heat Exhaustion.*—The revised nomenclature described in detail in the 1921 report was brought into use during 1922. There were 11 cases of heatstroke, resulting in 10 deaths. Nine cases, all with fatal termination, occurred in Baghdad between the 19th and 25th of July. During this period the shade temperature rose from 113·5° F. to 120·9° F. One fatal case was reported from India. The remaining case occurred in Palestine. In addition, 175 cases of heat exhaustion occurred abroad, giving a case ratio per thousand of strength of 22·3. Ninety-one cases were reported from Iraq, 68 from the Mediterranean Littoral, 10 from India and 6 amongst drafts *en route* to and from areas abroad. There were no deaths.

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CHAPTER IV.—MISCELLANEOUS.

The Central Medical Board.

1. During 1922 good results have continued from the policy of maintaining a Central Medical Board for the initial medical examination and subsequent physical assessment as required of flying officers. Owing to the fact that serving personnel are examined by the same board as aviation candidates, a uniform standard of physical fitness for flying has been maintained. The presence of specialist members on the Board has ensured a thorough examination, from all aspects, of cases regarding whose physical fitness for flying there has been any doubt. The examinations conducted by the Central Medical Board on pilots who have exhibited physical disabilities for flying have contributed further data for research.

2. The functions and constitution of the Board have been described in detail in previous reports, and remain practically unchanged. In addition to the functions previously described, all candidates for admission to the medical, stores, accounting and chaplains branches and to the nursing service are now examined by the Central Medical Board. The procedure and methods of examination for candidates for flying duties are unchanged and are as described in previous reports.

3. The total number of examinations carried out by the Board during 1922 amounted to 1,088. Of these, 156 were either candidates for admission to non-flying branches or re-examinations. The former class are excluded from statistical analysis as presenting no features of special interest from the point of view of flying, and the latter as it has been found unnecessary to repeat the original examination in full detail in re-examinations. A further 171 examinations were of sick serving officers. Of the remaining 761 cases, 487 were accepted and 274, of whom 5 were temporarily unfit, were rejected. Table XIX shows the physical standards of the former class and Table XX the causes of rejection of the latter class. Table XXI shows the proportion of candidates accepted. As in previous years defective vision alone is the chief cause of rejection, and this condition is also more frequently found in association with defective physical efficiency than any of the remaining causes of rejection. From a total of 269 rejections, 102 were solely due to defects of vision. The defective physical efficiency group is mainly composed of cases in which the efficiency of the cardio-vascular, respiratory and nervous systems fall below the standards accepted as essential for flying. Candidates in this group are, for this reason, regarded as unlikely to stand the strain imposed upon them by flying duties.

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4. Compared with 1921, the chief points of interest in Table XIX are :—

(i) The uniformity of the results in the total number of examinations conducted during the two years.

(ii) The lengthening of the time of return to normal from the exercise pulse rate, during 1922.

It is impossible to say how far this may in part be due to the slight rise in the rate of the pulse after exercise, noticeable in the 1922 figures.

5. Column 4 of Table XIX shows officers who were selected for permanent commissions by the executive authorities, mainly on account of their aptitude for flying. All on medical examination displayed the physical attributes characteristic of the successful flying officer. Amongst this group, there were no rejections in respect of physical unfitness for flying.

6. The numbers shown in brackets in Table XIX under the vital capacity figures are calculated by the Dreyer formulæ from sitting height, weight and chest measurements, and are his class A standards. The actual vital capacity figures of each group are higher than the corresponding Dreyer standards. During 1922 the vital capacity figures obtained by the Central Board were forwarded to the Anthropometric Committee of the Medical Research Council as data for statistical analysis for research into the assessment of vital capacity.

7. The 171 sick serving officers referred for examination to the Central Board consisted of 101 from the United Kingdom and 70 invalided from abroad in the immediate past. Fifty-six were finally invalided from the service, 40 from the United Kingdom group and 16 from abroad. The predominant disabilities among the home group were debility 18, visual defects and disorders 16, functional nervous disorders 21, recent or remote injuries 14, pulmonary or bronchial disease 7. The commonest causes of invaliding from the service from this group were functional nervous disorders 15, recent or remote injuries 6, pulmonary or bronchial disease 7. The chief disabilities reported among the overseas group were debility 15, occurring usually after tropical infections, functional nervous disorders 15, of which 6 were invalided from the service, remote or recent injury 8, and visual defects and disorders 5.

8. Research work in connection with abnormalities of the circulatory system, especially in regard to fainting, nausea and vomiting in the air, was carried out during the year, together with control experiments upon successful pilots who had never experienced such disabilities.

Medical Officers School of Instruction.

9. The Medical Officers School of Instruction is situated at Hampstead and is administered in conjunction with the Central Medical Board. During the year, 53 medical officers passed through the school. Each course of instruction consists of

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TABLE XIX.—SUMMARY 1922 SHOWING THE AVERAGE PHYSICAL MEASUREMENTS OF ACCEPTED PILOTS.

Test.	Candidates for cadetships. 1.	Candidates for short service commissions. 2.	N.C.O. candidates. 3.	Serving officers examined for permanent commissions. 4.	Serving officers examined for fitness for flying and extensions of short service commissions. 5.	Totals. 6.
Numbers accepted	66	268	56	49	48	487
Age - - - - - - - - - yrs.	18·2	23·0	21·9	27·4	27·2	23·1
Height standing - - - - - cms.	176·8	174·3	171·7	175·6	175·1	174·5
Height sitting - - - - - - „	91·3	90·7	89·8	90·9	91·0	90·7
Weight - - - - - - - kgms.	64·6	63·8	61·9	67·2	64·0	64·0
Chest - - - - - - - cms.	85·5	84·8	85·4	88·8	90·3	85·9
Vital capacity - - - - - - c.cms.	5,096 (4,237)	4,962 (4,182)	4,626 (4,142)	5,073 (4,372)	4,738 (4,376)	4,931 (4,221)
Breath-holding - - - - - secs.	81·8	75·7	73·1	79·7	74·0	76·5
Expiratory force - - - - mm. Hg.	133·0	138·0	132·3	153·0	144·8	138·9
40 mm. Hg. test - - - - - secs.	63·2	62·5	61·4	63·3	60·3	62·3
Systolic pressure - - - - mm. Hg.	128·5	130·3	129·6	125·5	125·7	129·0
Diastolic pressure - - - - „	79·2	81·9	81·6	79·8	79·5	81·1
Pulse sitting - - - - - per min.	71·4	73·7	71·2	66·7	71·4	72·2
Pulse standing - - - - - „	78·6	81·5	77·5	74·6	78·6	79·7
Pulse after exercise - - - - „	115·3	106·0	98·2	97·4	98·4	104·7
Return to normal - - - - - secs.	30·3	30·7	31·5	31·5	27·5	30·5

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lectures and practical demonstrations by the specialist members of the Central Medical Board in the following subjects :—

(i) The importance of good vision in flying personnel, together with practical demonstrations of the methods employed for testing visual efficiency.

(ii) The physical attributes of the successful aviator.

(iii) The methods of selection of flying personnel, together with the methods of assessment of physical efficiency.

(iv) The principles underlying the successful supervision of flying personnel, especially from the point of view of preventive care.

(v) The ear, nose and throat in relation to flying, together with the methods of examination.

(vi) The compilation and rendering of medical records and forms.

10. During the year, lectures on the medical aspects of flying were given by the Director of Medical Research at most of the R.A.F. stations in the United Kingdom.

TABLE XX.—CAUSES OF REJECTION BY THE CENTRAL MEDICAL BOARD DURING 1922.†

Reason for rejection.	Candidates for cadetships.	Candidates for short service commissions.	N.C.O. candidates.	Serving officers examined for permanent commissions.	Serving officers examined for fitness for flying and extension of short service commissions.	Total.
(1) Vision	9	73	14	—	6	102
(2) Ear, nose, throat and teeth	—	9	1	—	1	11
(3) Medical and surgical	1	13	4	—	5	23
(4) Defective physical efficiency	9	70	12	—	4	95
(5) Combinations of 1, 2, 3 with 4	3	32	3	—	—	38
Totals	22	197	34	—	16	269

TABLE XXI.—RESULTS OF 756 EXAMINATIONS AS TO FITNESS FOR FLYING.†

Candidates for	Number accepted.	Number rejected.	Total.	Percentage accepted.
Cadetships	66	22	88	75
Short service commissions	268	197	465	58
N.C.O. pilots	56	34	90	62
Permanent commissions (serving officers only)	49	—	49	100
*Extension of short service commissions	48	16	64	75
Total	487	269	756	64

* Includes 24 serving officers examined for fitness for flying.

† Excluding five officers temporarily unfit.

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Physical Efficiency of Officers of the Royal Air Force.

11. The procedure, as described in the report for 1921, whereby all officers are medically examined at the time of completion of the annual confidential report, towards the end of the calendar year, was continued in 1922. Particular importance is attached to this examination as it reveals any organic defects which may have developed during the previous twelve months, and the system of recording the examination enables the results obtained to be compared with the standards of physical fitness required and with previous results from the same individual.

12. The total strength of officers serving on 31st December, 1922, was 2,950. Cards were received in respect of 2,690 examinations. Of the cards received, 36 were deficient in one or more particulars and for this reason were eliminated from analysis. Breakage of apparatus, difficulty in replacing such items as U-tubes, etc., and absence of weighing machines in out-of-the-way places, accounted for the majority of the omissions. The non-receipt of the balance can be accounted for by the omission of certain officers in hospital, on sick leave, on half pay, on ordinary leave, or *en route* to and from commands abroad, and also by the difficulty in examining officers out of touch with R.A.F. medical officers, who alone are conversant with the technique of certain of the physical efficiency tests employed.

13. Table XXII shows the result of the examination of 2,654 officers, classified by the branch of the service to which they belong, in respect of fitness for full flying duties. The percentage fit for full flying duties in each branch of the service is also shown. Corresponding figures for the year 1921 are shown in italics. Comparing the two years, it will be noticed that—

(i) The percentage of the total fit for full flying duties has risen 1 per cent., being 78 per cent. in 1922, compared with 77 per cent. in 1921.

(ii) This rise is more marked in the general duties branch, the essential function of which is flying. The increase here is 3 per cent.

(iii) There is a close approximation of the percentages fit for full flying duties at home and abroad.

The 571 officers shown as unfit for flying, of whom 294 belonged to non-flying branches, were all actually on duty and the greater proportion were fit for ground service both at home and abroad. Officers found temporarily unfit for flying at the time of examination are included in this total. Table XXIII shows the reasons of unfitness for flying duties. The letters D.P.E. stand for " Defective Physical Efficiency," which alone or in combination with other causes accounts for 201 cases, this figure being the same in 1921. Defective vision alone accounts for a further 230 cases.

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14. Table XXIV shows details of the physical efficiency of 1819 officers of the general duties branch, who were found fit for full flying duties at the time of the examination. It also shows the average response to the various tests capable of numerical expression, grouped by the age of the officers at home and abroad. Corresponding figures for the year 1921 are shown in italics. Points of interest are :—

(i) The high standard revealed.

(ii) The uniformity of the results obtained for the two years and the close relationship between the figures and the former standards based on war time conditions.

(iii) The marked drop in the rate of the standing pulse noticeable in each age group both at home and abroad during 1922. This may be accounted for partly by increased physical efficiency and partly by the fact that longer time was allowed for the standing pulse to assume a steady rate when performing the test.

(iv) The slightly lower average standards reached by officers serving abroad.

(v) The general improvement in the results of the 40 mm. Hg. and expiratory force tests during 1922.

(vi) The slight increase in the rate of the pulse after exercise, although the time of return to the normal standing pulse has fallen slightly.

15. Table XXV gives details of the results of further tests on officers fit and unfit for flying duties. Corresponding figures for 1921 are shown in italics. The salient features of this table are :—

(i) The general improvement as shown by the 1922 figures.

(ii) The lower standard of vision amongst the unfit group during 1922.

(iii) The low percentage of officers showing signs of pyorrhœa, which confirms the results obtained in 1921 and tends to disprove the impression formed during the war that pilots are particularly prone to this disease.

16. It is noteworthy that the results obtained during the years 1921 and 1922 by many and diverse medical officers both at home and abroad should show :—

(i) Such close approximation in the two years, pointing to uniformity of technique.

(ii) Such slight variation from the former standards, which were evolved from the examinations of successful pilots during the war.

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Table XXII.—Physical Assessment in respect of Flying Duties of 2,654 Officers.

Branch.	At Home.				Abroad.				Total.			
	Fit full flying.	Unfit full flying.	Total.	Percentage fit full flying.	Fit full flying.	Unfit full flying.	Total.	Percentage fit full flying.	Fit full flying.	Unfit full flying.	Total.	Percentage fit full flying.
				Per cent.				Per cent.				Per cent.
General duties - -	1,181	173	1,354	87	638	104	742	86	1,819	277	2,096	87
	1,258	*259*	*1,517*	*83*	*628*	*88*	*616*	*86*	*1,786*	*347*	*2,133*	*84*
Stores and chaplains -	111	148	259	43	45	80	125	36	156	228	384	40
	138	*178*	*316*	*44*	*32*	*36*	*68*	*47*	*169*	*214*	*383*	*44*
Medical and dental -	69	48	117	59	39	18	57	68	108	66	174	62
	52	*43*	*95*	*54*	*21*	*8*	*29*	*72*	*73*	*53*	*126*	*58*
Total non-general duties.	180	196	376	48	84	98	182	46	264	294	558	47
	190	*221*	*411*	*46*	*53*	*44*	*97*	*55*	*243*	*265*	*508*	*48*
Total - -	1,361	369	1,730	79	722	202	924	78	2,083	571	2,654	78
	1,448	*480*	*1,928*	*75*	*681*	*132*	*713*	*82*	*2,029*	*612*	*2,641*	*77*

Table XXIII.—Reasons for unfitness (temporary or otherwise) of 558 Officers for Flying Duties.

Defect.	Number unfit.		
	General duties branch.	Other branches.	All branches.
Eyes - - - - - -	86	144	230
Ears or teeth - - - -	4	2	6
Medical - - - - -	62	33	95
Surgical - - - - -	24	15	39
D.P.E. - - - - -	63	66	129
D.P.E. and eyes - - -	24	28	52
D.P.E. and ears or teeth - -	2	—	2
D.P.E. and medical - - -	7	6	13
D.P.E. and surgical - - -	5	—	5
Totals - - - -	277	294	571

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TABLE XXIV.—AVERAGE RESULTS OF TESTS OF 1,819 OFFICERS OF THE GENERAL DUTIES BRANCH, FIT FOR FLYING DUTIES, CLASSIFIED IN AGE GROUPS AT HOME AND ABROAD.

—	Age group.	No. examined.	Age.	Weight.	Time breath held.	Expiratory force.	40 mm. Hg. test.	Pulse rate per minute.			Time taken to return to normal.	Systolic pressure.	Pulse pressure.
								Sitting.	Standing.	After exercise.			
	Yrs.	No.	Yrs.	Kilos.	Secs.	mm. Hg.	Secs.				Secs.	mm. Hg.	mm. Hg.
At home - -	under 25	365	22·2	66·6	69·5	142·0	55·4	73·4	80·4	101·3	21·9	122·3	42·3
		360	*22·2*	*66·7*	*71·9*	*138·3*	*52·9*	*73·6*	*86·6*	*100·5*	*22·9*	*122·7*	*43·1*
	25–30	465	27·4	67·9	70·1	149·3	55·1	73·3	80·4	101·1	22·3	121·6	40·9
		456	*27·3*	*67·5*	*68·4*	*135·6*	*52·2*	*75·6*	*86·8*	*100·4*	*22·6*	*122·4*	*42·2*
	31 & over	351	35·3	69·1	64·4	144·0	50·5	73·8	80·2	103·0	22·9	122·0	41·2
		321	*35·0*	*69·6*	*65·1*	*134·2*	*47·5*	*74·8*	*87·7*	*101·4*	*23·3*	*122·4*	*41·3*
Total at home		1,181	28·1	67·8	68·2	145·4	53·8	73·5	80·3	101·7	22·4	121·9	41·5
		1,137	*27·9*	*67·8*	*68·6*	*136·0*	*51·0*	*74·0*	*87·0*	*100·7*	*22·9*	*122·5*	*42·2*
Abroad - -	under 25	178	22·9	67·6	67·4	137·0	51·5	74·6	81·9	103·2	22·5	121·7	40·7
		157	*22·6*	*66·3*	*67·2*	*131·0*	*50·0*	*70·9*	*84·4*	*97·4*	*22·8*	*117·4*	*38·6*
	25–30	204	27·1	68·2	70·4	136·8	53·2	71·6	79·1	100·7	23·2	121·9	40·9
		207	*26·9*	*68·4*	*70·8*	*127·0*	*51·0*	*70·7*	*84·3*	*97·7*	*24·4*	*118·4*	*39·3*
	31 & over	166	34·4	70·1	64·9	128·6	48·9	73·7	80·9	101·2	25·6	120·1	40·4
		82	*34·3*	*68·7*	*62·8*	*120·8*	*46·4*	*71·6*	*84·4*	*96·2*	*24·4*	*119·8*	*39·6*
Totals abroad		638	27·8	68·5	68·2	134·7	51·6	73·0	80·3	101·5	23·1	121·4	40·7
		446	*26·7*	*67·9*	*68·0*	*127·2*	*49·6*	*70·9*	*84·3*	*97·3*	*23·9*	*118·2*	*39·1*
Total - -		1,819	28·0	68·1	68·2	141·7	53·0	73·3	80·3	101·7	22·6	121·7	41·2
		1,583	*27·5*	*67·8*	*68·4*	*133·6*	*50·6*	*73·1*	*86·2*	*99·8*	*23·2*	*121·3*	*41·3*
Pre-existing standards based on war conditions.					70	110·0	52·0	72·0	84·0	96–108	under 30·0	120·0	40·0

Functional Nervous Disorders among Officers.

17. The revised and amplified classification of functional nervous disease, which was described in detail in the Health Report for 1921, was brought into general use during the year 1922.

18. The total number of fresh cases occurring among officers during 1922 was 58, compared with 59 in 1921. Of these, 39 were reported at home, the same number as in 1921, and 19 abroad, compared with 20 in the previous year. This gives a relatively higher incidence abroad during both years.

19. The 39 cases which occurred at home consisted of neurasthenia 21, anxiety neurosis 14, hysteria 3, and one border line case. Of the 19 cases occurring abroad, 11 were neurasthenia

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Table XXV.—Average Results of further Tests of 2,654 Officers.

(The figures in brackets are for 1921.)

Nature of test.	Officers fit for flying duties. 2,083 (1,803).			Officers unfit for flying duties 571 (556).			Total examined. 2,654 (2,359).		
	Numbers.	Percentage.		Numbers.	Percentage.		Numbers.	Percentage.	
Tremor.									
Absent	1,318 (1,050)	63·3 (58·2)		293 (251)	51·3 (45·1)		1,611 (1,301)	60·7 (55·2)	
Present	765 (753)		36·7 (41·8)	278 (305)		48·7 (54·9)	1,043 (1,058)		39·3 (44·8)
Self-balancing.									
Steady	1,831 (1,547)	87·9 (85·8)		383 (350)	67·1 (63·0)		2,214 (1,897)	83·4 (80·4)	
Unsteady	252 (256)		12·1 (14·2)	188 (206)		32·9 (37·0)	440 (462)		16·6 (19·6)
Knee jerks.									
Normal	1,831 (1,406)	87·9 (78·0)		461 (400)	80·8 (71·9)		2,292 (1,806)	86·3 (76·6)	
Abnormal	252 (397)		12·1 (22·0)	110 (156)		18·2 (28·1)	362 (553)		13·7 (23·4)
Vision.									
6/6 both eyes	1,896 (1,642)	91·0 (91·1)		262 (282)	45·9 (50·7)		2,158 (1,924)	81·3 (81·6)	
6/6 and 6/9; 6/9 and 6/9	143 (106)		6·9 (5·9)	74 (63)		13·0 (11·3)	217 (169)		8·2 (7·2)
Over 6/9 in either	44 (55)		2·1 (3·0)	235 (211)		41·1 (38·0)	279 (266)		10·5 (11·2)
Nasopharynx.									
Normal	1,962 (1,690)	94·2 (93·7)		534 (511)	93·5 (91·9)		2,496 (2,201)	94·0 (93·3)	
Abnormal	121 (113)		5·8 (6·3)	37 (45)		6·5 (8·1)	158 (158)		6·0 (6·7)
Teeth.									
No treatment required	1,563 (1,445)		75·1 (80·2)	433 (416)	75·8(74·8)		1,996 (1,861)		75·2 (78·9)
Treatment required	520 (358)	24·9 (19·8)		138 (140)		24·2 (25·2)	658 (498)	24·8 (21·1)	
Pyorrhœa.									
Absent	2,044 (1,763)	98·1 (97·8)		548 (519)	96·0 (93·4)		2,592 (2,282)	97·7 (96·8)	
Present	39 (40)		1·9 (2·2)	23 (37)		4·0 (6·6)	62 (77)		2·3 (3·2)

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and 8 anxiety neurosis. Twelve cases were invalided to the United Kingdom from abroad. The total number of cases invalided from the service was 21, the causes of invaliding being neurasthenia 6, of which 2 were 1921 cases, anxiety neurosis 12, including 2 cases from 1921, hysteria 2, and the single border line case.

20. Of the total of 32 cases of neurasthenia reported, 22 occurred amongst officers of the general duties branch, the essential function of which is flying, the remaining 10 among officers of non-flying branches. The 22 cases of anxiety neurosis can be divided as follow, 18 amongst officers of the general duties branch and the remaining 4 among officers of other branches.

Medical Examination of Recruits.

TABLE XXVI.—ACCEPTED RECRUITS, 1921 AND 1922.

Average Physical Measurements classified by Age.

Age last birthday.	Total.	Height. Ft.	Weight. Lbs.	Chest. Max. Ins.	Chest. Min. Ins.	Chest. Range. Ins.
14–17 -	1,085	5·39	111·4	32·3	29·5	2·8
	810	*5·37*	*109·6*	*32·1*	*29·7*	*2·4*
18 -	317	5·56	126·1	35·0	32·3	2·7
	2,260	*5·50*	*123·9*	*34·9*	*32·4*	*2·5*
19 -	391	5·56	127·9	35·1	32·5	2·7
	1,264	*5·50*	*126·1*	*35·2*	*32·7*	*2·5*
20 -	283	5·55	129·0	35·4	32·8	2·7
	793	*5·51*	*128·2*	*35·6*	*33·0*	*2·6*
21 -	239	5·57	131·8	35·8	33·1	2·7
	495	*5·48*	*128·2*	*35·7*	*33·0*	*2·7*
22 -	236	5·55	129·8	35·7	33·0	2·7
	378	*5·51*	*129·6*	*35·8*	*33·2*	*2·6*
23 -	138	5·56	131·4	36·0	33·3	2·8
	229	*5·53*	*132·1*	*36·1*	*33·5*	*2·6*
24 -	97	5·54	130·9	35·9	33·2	2·7
	193	*5·51*	*131·5*	*36·1*	*33·5*	*2·6*
25 -	79	5·59	135·9	36·4	33·7	2·8
	145	*5·50*	*131·6*	*36·1*	*33·5*	*2·6*
26 -	96	5·58	132·7	36·3	33·6	2·6
	185	*5·49*	*132·2*	*36·3*	*33·8*	*2·5*
27 and over -	206	5·62	139·1	36·9	34·2	2·7
	506	*5·51*	*137·1*	*36·2*	*33·7*	*2·5*
Total -	3,167	5·50	123·9	34·5	31·8	2·8
	7,258	*5·49*	*125·5*	*35·1*	*32·5*	*2·6*

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TABLE XXVII.—ACCEPTED RECRUITS, 1921 AND 1922.

Average physical measurements and ages classified by occupation.

Previous occupation.	No.	Age.	Height.	Weight.	Chest.		
					Max.	Min.	Range.
		Yrs.	ft.	lbs.	Ins.	Ins.	Ins.
1. Building trades and electricians	235	20·9	5·55	128·8	35·3	32·7	2·7
	833	*20·4*	*5·51*	*127·6*	*35·4*	*33·0*	*2·4*
2. Clerks	439	21·6	5·58	128·4	35·3	32·6	2·8
	565	*20·9*	*5·57*	*128·6*	*35·5*	*32·9*	*2·6*
3. Commercial, public and personal services	206	21·3	5·53	127·0	35·1	32·4	2·7
	480	*21·6*	*5·53*	*129·5*	*35·6*	*33·1*	*2·5*
4. Metal workers	573	20·7	5·54	127·8	35·2	32·6	2·7
	1,770	*20·1*	*5·50*	*126·0*	*35·3*	*32·8*	*2·5*
5. Schoolboys	871	15·9	5·39	111·1	32·2	29·4	2·9
	782	*15·4*	*5·37*	*109·4*	*32·0*	*29·6*	*2·4*
6. Transport and communications	426	21·5	5·56	131·8	35·8	33·1	2·7
	935	*20·8*	*5·51*	*129·4*	*35·7*	*33·1*	*2·6*
7. Indoor trades (other than above)	170	21·1	5·53	128·4	35·2	32·6	2·7
	690	*20·8*	*5·48*	*126·9*	*35·3*	*32·8*	*2·5*
8. Outdoor trades (other than above)	228	20·6	5·50	126·7	35·4	32·7	2·7
	1,128	*20·4*	*5·46*	*126·8*	*35·5*	*33·0*	*2·5*
9. Unstated	19	19·6	5·78	140·3	36·1	33·4	2·7
	75	*20·5*	*5·54*	*129·3*	*35·3*	*32·5*	*2·8*
Total	3,167	19·6	5·50	123·9	34·5	31·8	2·8
	7,258	*20·1*	*5·49*	*125·5*	*35·1*	*32·5*	*2·6*

TABLE XXVIII.—ACCEPTED RECRUITS, 1921 AND 1922.

Average physical measurements and ages classified by geographical areas of residence.

Locality.	No.	Age.	Height.	Weight.	Chest.		
					Max.	Min.	Range.
			Ft.	Lbs.	Ins.	Ins.	Ins.
London	581	20·6	5·54	127·4	35·2	32·6	2·7
	1,021	*20·1*	*5·50*	*126·4*	*35·3*	*32·7*	*2·6*
Scotland	229	20·5	5·48	126·4	35·0	32·3	2·7
	574	*20·5*	*5·45*	*126·5*	*35·4*	*32·8*	*2·6*
Ireland, Wales and West of England	700	18·5	5·43	119·5	33·3	30·6	2·8
	1,289	*19·7*	*5·48*	*124·6*	*34·5*	*32·1*	*2·4*
N.E., N.W., & N. of England	448	19·8	5·49	123·5	34·3	31·5	2·9
	1,485	*20·3*	*5·45*	*124·7*	*35·2*	*32·6*	*2·6*
E. & S.E. England	831	19·4	5·52	123·5	34·4	31·7	2·7
	1,886	*19·8*	*5·51*	*125·8*	*34·9*	*32·4*	*2·5*
Midlands	369	20·2	5·53	126·2	34·8	32·1	2·7
	993	*20·2*	*5·49*	*125·7*	*35·5*	*33·0*	*2·5*
Unstated	9	21·8	5·63	135·7	36·3	33·8	2·6
	10	*21·1*	*5·66*	*134·9*	*36·0*	*33·1*	*2·9*
Total	3,167	19·6	5·50	123·9	34·5	31·8	2·8
	7,258	*20·1*	*5·49*	*125·5*	*35·1*	*32·5*	*2·6*

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21. Recruits for the Royal Air Force during 1922 were medically examined at R.A.F. recruiting depôts by R.A.F. medical officers at all R.A.F. stations by R.A.F. medical officers, at certain of the larger towns in Great Britain by civil medical practitioners. At the beginning of the year R.A.F. recruiting depots were open at—

London	Chatham	Plymouth
Portsmouth	Southampton	Brighton
Bristol	Birmingham	Cardiff
Norwich	Liverpool	Manchester
Leeds	Hull	Nottingham
Glasgow	Newcastle	Edinburgh

Towards the end of March 1922, all recruiting depôts except those at London, Birmingham and Glasgow were closed down and civil medical practitioners were employed at the following towns:—

Northampton	Leeds	Middlesbrough
Southsea	Plymouth	Hull
Norwich	Nottingham	Manchester
Chatham		

At all of these towns a recruit undergoes a preliminary medical examination, which is carried out by the civil medical practitioner, who, if the recruit is found fit, passes him to the nearest R.A.F. recruiting depôt for a more detailed medical examination. Boys who were successful at the competitive examination for entry were medically examined at Halton and Cranwell by R.A.F. medical officers.

22. The physical standards laid down for recruits, both men and boys, remained unaltered during the year, and have been described in previous reports. The total number of reports recording medical examination on entry received during the year was 3,167, of these 1,085 were in respect of boys. Table XXVI shows the average physique classified by age. Corresponding figures for the year 1921 are shown in italics. Points of interest in the table are:—

(i) The uniformity of the average results obtained during the two years.

(ii) The marked increase in weight in the group aged 25 during 1922. No definite cause for this increase could be found.

(iii) The increase in the chest range in boys during 1922.

Table XXVII shows the average physique and ages classified by previous occupation, the corresponding figures for 1921 being shown in italics. Table XXVIII shows the average physique and ages classified by geographical areas of residence. The corresponding figures for 1921 are shown in italics.

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23. The causes for rejection and numbers rejected on medical grounds at recruiting depôts during the year is shown in Table XXIX.

TABLE XXIX.—CAUSE AND PERCENTAGE OF REJECTION OF RECRUITS AT R.A.F. RECRUITING DEPÔTS DURING 1922.

Causes of rejection.	Number rejected.	Percentage of total rejected.
Loss or decay of many teeth	1,277	28·3
Disease of the heart	617	13·7
Poor physique	424	9·4
Deformities of feet	372	8·2
Defects of vision	266	5·9
Varicocele	215	4·8
Diseases of middle ear (including deafness)	208	4·6
Varix	112	2·5
Diseases of lungs	106	2·3
Other causes	919	20·3
Total	4,516	100·0

Hygiene and Sanitation.

United Kingdom.

24. Improvements in the sanitary conditions of stations have been progressive during the year. As far as possible, airmen specially trained in the work have been employed on sanitary duties.

25. *Lectures and courses.*—Lectures on hygiene to cadets at Cranwell have been continued, and examination papers submitted twice during the year showed a satisfactory standard of knowledge among the candidates examined. The courses for officers and airmen at the Army School of Hygiene, Aldershot, were well attended; twenty-four officers and twenty-seven airmen obtained pass marks. Each course lasted three weeks, during which thorough practical and theoretical instruction was given. In addition, selected medical orderlies were sent for courses of four months' duration qualifying them on passing the examination to be mustered as sanitary orderlies. During the year, twenty-two attended these courses, of whom nineteen obtained pass marks. Airmen so trained were posted to unit sanitary detachments and their services utilised to the fullest extent.

26. *Accommodation.*—The new barracks at Halton, accommodating over 2,000 boys, were occupied during the year. Hutted accommodation provided satisfactory temporary housing for the remainder of the personnel. At Cranwell, improvements

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to existing buildings and new construction have considerably improved the station. At all stations in the Coastal Area, with the exception of Forts Rowner and Grange at Gosport, brick and iron huts continue to be used. These huts required a considerable amount of reconditioning during the year. Improvements to existing accommodation, as described in the Report for 1921, were made at all other stations. No new stations were opened during the year; Donibristle, Felixstowe and Cattewater were reduced to care and maintenance parties.

27. *Conservancy.*—Automatic flush-trough latrines are still in use at several stations, conversion to hand-flushing type being gradually carried out. Experiments were carried out to determine the minimum frequency of flushing required. Disposal of refuse at all stations has been satisfactory. New systems of drainage and sewage have been completed at Netheravon and Upavon. Fewer analyses of sewage were carried out during the year, compared with 1921, but routine inspections by Works and Buildings Department representatives showed that all systems were working satisfactorily.

28. Recreational facilities have been provided at each station and full use has been made of their value as an essential part of the training of officers and airmen. The new sports ground at the Depôt, Uxbridge, has been almost completed.

29. Water supplies have been regularly examined. Sixty-nine chemical and bacteriological analyses were made during the year, and with very few exceptions proved satisfactory. At Spittlegate, the unsatisfactory supply referred to in the Report for 1921 was still in use and further representations to utilise the Grantham town supply were made. It is hoped that this will shortly be done. At Manston the unsatisfactory results of analyses, both chemical and bacteriological, combined with the unpleasant taste and appearance of the water, led to a full investigation of the supply of this station. Water is obtained from the Ramsgate town supply and is led to the camp by steel piping $2\frac{3}{4}$ miles in length which was laid down during the war. Much rusting with minute perforations of the pipe line were discovered, and this was considered to be the probable cause of pollution. The matter is still under consideration and remedial measures have been put forward. Meanwhile, chlorination is being carried out. At Upavon the supply from the Valley Bore is still unsatisfactory, but the use of this source of supply is confined to emergency, when the Hill Bore cannot be used. When in use chlorination is necessary and is carried out. Some doubt has arisen as to possible contamination of the Isle of Grain water. Analyses again gave a rather high ammonia and chlorine content, but this is considered consistent with the close proximity of the source to the sea. There was no evidence of sewage pollution.

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30. *Food and cooking.*—The food supplied has been generally good and varied, and arrangements for storage have been satisfactory. Improvement in cooking has been noticeable, due primarily to the more thorough training of cooks, their increasing experience and greater supervision. Exceptions as regards quality of the food were evidenced by certain small outbreaks of illness amongst personnel at Halton, details of which are described in Chapter II., page 30, and also by the necessity of occasionally condemning small quantities of fresh and tinned foods, bread, biscuits, eggs and fish. The quantities condemned were small in view of the large consignments handled. At Flowerdown a number of tins of preserved meat, on which suspicion rested, were analysed. Several were found to have been canned in 1918 and were "warranty expired." Signs of deterioration were present. Steps were subsequently taken to prevent the issue of all preserved food for which the warrant had expired.

31. *General.*—No adverse reports have been received as regards the effect of training on boys. Experimental measurements on growing boys at Halton have been carried out during the year, and are continuing. It is hoped that some figures of value showing the rate of growth of boys under training may be obtained. The health of all personnel has been good, and general improvement in physique has been steadily progressive. With the exception of the outbreak of influenza, especially marked at Cranwell, Halton, Leuchars and Gosport and in a few stations in the Inland Area during the early months of the year, and a small outbreak of scarlet fever amongst boys at Cranwell during the summer, no communicable disease has assumed epidemic proportions. The influence of any particular trade on the health of personnel has been carefully watched and mention is made of—

(i) Several cases of illness, chiefly pulmonary, which occurred at Kidbrooke in December amongst sweepers in the armourer's shop. It was suggested that drippings of caustic soda evaporated on the floor, and the inhalation of dust so impregnated, possibly caused the pulmonary irritation. Recommendations to prevent recurrence included the provision of deep trays, greater care in the drainage of excess caustic soda from articles removed from the hot bath, the provision of a concrete floor with adequate drainage around the bath, sweeping the floor in a wet condition after sprinkling with weak acid, and outlet pipes of ample size to be fitted to fume hoods. These measures met with complete success.

(ii) Effects of dope were few in number and of minor importance, but further recommendations with regard to the storing of doped articles in rooms separated from the dope shops were put forward.

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Egypt and Palestine.

Egypt.

32. During 1922 the formation of Egypt and Palestine into separate commands under separate administration has facilitated all matters affecting the health of the personnel in both areas.

33. *Conservancy.*—In Egypt there has been progressive improvement in general sanitation and the position has been more satisfactory. The recommendations of the Sanitary Committee, to which reference was made in the Report for 1921, have been expeditiously carried out. Reconditioning of existing accommodation and the construction of new buildings has been undertaken.

34. *Water supplies.*—The supply at Aboukir was the chief problem that called for special attention. Further trouble was experienced as regards the source, and the methods of sedimentation and filtration were found to be inadequate. The provision of more efficient apparatus for adding coagulating material to the settling tanks and the addition of a new filter resulted in a more satisfactory supply, but further consideration is being given to the source of supply.

35. Anti-mosquito measures were carried out at all stations. The question of irrigation and the removal of stagnant water likely to afford breeding places for mosquitoes, more especially at Abu-Sueir, was undertaken by the Public Health and Irrigation Department of the Egyptian Government, who also undertook special supervision of the sanitary conditions of all civil areas in the vicinity of air force stations. The officers' rest camp, situated at Aboukir, was extensively used.

Palestine.

36. *Accommodation.*—Building and engineering has been carried out out by the Palestine Works Department. Work during the year was confined to the construction of roads and surface drainage in the new cantonments, provision of a new water supply at Sarafand, and reconditioning of huts.

37. *Conservancy.*—Latrines, cookhouses and ablution rooms have been improved and careful supervision has been carried out.

38. *Water supplies.*—At most stations water is obtained from deep wells, the supply being ample and of good quality as shown by frequent analyses. The supply at Jerusalem, which is obtained from the civilian source, was frequently intermittent and scanty. At Samakh, the supply is obtained from the River Jordan; at Beisan, the water is pumped from a spring to the camp, which is over a mile from the source of supply.

Malta and Constantinople.

39. Conditions at Malta were greatly improved as a result of the recommendations made by the Sandfly Fever Commission.

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The measures suggested to improve buildings, ground, drainage, &c., so as to reduce the incidence of sandfly fever, all tended to improvement in the general sanitary condition. Levelling and spraying of ground with tar, pointing and filling in of cracks in walls, housing of personnel in upper floors of buildings only, re-arrangement of rooms in the new quarters for officers, and an adequate supply of fans have all been carried out.

40. R.A.F. personnel of the Constantinople Force were under active service conditions. Sanitary arrangements were, on the whole, satisfactory, and sickness was not excessive.

Iraq.

41. During 1922, Iraq was constituted an independent command, and the inspection and supervision of stations became the direct duty of the medical staff appointed to the command, with resulting improvement in sanitary conditions. Sanitary sections under trained medical officers were formed at Baghdad and Basrah. Three main stations were in occupation, viz., Baghdad (Hinaidi), Basrah and Mosul. A detachment was also stationed at Kirkuk. Personnel were accommodated as detailed in the Report for 1921; electric light and fans were installed during the year. In winter the buildings were heated by oil stoves. Adequate provision was made for recreational facilities.

42. Water supplies continued to be satisfactory. The river water usually contains lactose fermenting organisms in 1/1,000th c.c., but after chlorination and filtration no organisms were found in less than 100 c.c.s of water. Water-borne diseases were uncommon, and only at Mosul did an undue incidence of dysentery lead to the finding of irregularity in chlorination. Water analyses were carried out efficiently by the engineer services. During the hot weather when the river contained much sediment, alumino-ferric was successfully utilised for clarification.

43. *Conservancy.*—In the large cantonment at Hinaidi the disposal of sullage water continued to be a difficult problem. The level nature of the ground rendered drainage into the waterways impracticable, the soil being so impermeable that soakage pits are incapable of dealing with the large quantities of sullage water from baths, ablution houses and cookhouses. Generally the method adopted was to collect such water in pits and to empty them as frequently as possible by carts or lorries. A small quantity of sullage water was disposed of by direct irrigation on to patches of ground, on which castor shrubs were grown. Urine was usually disposed of in soakage pits. Excreta, horse litter, slaughter-house refuse and rubbish were incinerated.

44. *Food and cooking.*—Rations were adequate and cooking arrangements good. Canteens, soda factories and native coffee stalls were all carefully supervised by medical officers.

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45. *General.*—Except for the high incidence of sandfly fever during the summer, no disease assumed epidemic proportions. Anti-venereal measures were carried out with satisfactory results.

India.

46. The improvement in the sickness figures for India was chiefly attributable to improved sanitary conditions and to the increasing experience of both officers and airmen. At the same time other factors have been such as to tend to a lower sickness incidence.

47. Drafts totalling 605 airmen were posted from the United Kingdom. Every endeavour was made to ensure that these drafts reached India in the most favourable season.

48. The hill depôt situated at Lower Barian in the Murree Hills, was occupied by drafts from Ambala, Lahore and Risalpur from April to October. Parachinar served as the hill station for the units at Kohat and Peshawar. Detachments were stationed at Delhi and Poona in addition to the usual stations.

49. The type of accommodation, water supplies and sanitary arrangements at stations were as previously described in the Report for 1921. Suitable medical inspection rooms were arranged at all stations, and the use of a detention hospital at Karachi enabled all minor cases from that station to be treated locally.

Vaccination and Inoculation.

50. *Vaccination.*—The procedure as described in previous reports was continued during 1922. Generally, recruits and boys on enlistment voluntarily agreed to undergo vaccination when its value had been pointed out to them, but, as in the previous year, recruits from areas where smallpox was prevalent were required to be vaccinated before being finally accepted. Drafts posted abroad from the United Kingdom during the year totalled 3,635, and all were certified as protected by vaccination. Primary and other vaccinations carried out at home during the year numbered 10,071, representing a ratio of 477·9 per 1,000 of strength, compared with 369·4 in 1921. Abroad 1,355 vaccinations were performed, giving a ratio of 172·6 per 1,000 of strength, as compared with 126·7 during 1921. Table XXXI shows the number and results of vaccinations carried out in the various geographical areas during 1922. The large number of failures amongst the re-vaccinations abroad may possibly be accounted for by the fact that a certain degree of protection existed, due to recent previous vaccination. Failures amongst the few primary vaccinations carried out abroad cannot be considered excessive. At home, primary vaccinations show 96·1 per cent. successful, as against 93·5 per cent. in 1921; re-vaccinations show 86·5 per cent. successful, as compared with 92·8 per cent. during 1921.

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51. *Inoculations.*—Personnel of all drafts proceeding abroad were certified as having received prophylactic inoculation with T.A.B. vaccine within six months of the date of embarkation. Abroad 2,453 inoculations were carried out in Egypt, 970 in India, 522 in Iraq, and 450 in Malta. During 1922, bacillus paratyphosus "C" was added to the T.A.B. vaccine. This addition was necessary owing to the large number of R.A.F. personnel stationed in Iraq. The formula for T.A.B.C. vaccine was :—

Bacillus typhosus	1,000 millions	per c.c.
Bacillus paratyphosus A	750 millions	
Bacillus paratyphosus B	750 millions	
Bacillus paratyphosus C	750 millions	

First dose 0·5 c.c., 2nd dose 1·0 c.c.

Cholera vaccine was given in 1,081 instances in India. During the outbreak of influenza at home a few inoculations with influenza vaccine were carried out.

52. Summary of Laboratory Work done in R.A.F. Hospitals in the United Kingdom during 1922.

TABLE XXX.—SPECIMENS EXAMINED.

Analyses :—	
Fæces	6
Gastric	11
Urine	2,707
Water	69
Sewage	8
Food	7
Blood :—	
Agglutinations	167
Counts	1,359
Cultures	139
Malaria parasites	646
Wassermann tests	505
Cerebro-spinal fluid for :—	
Cultures	2
Cell count	3
Meningococcus	1
Syphilis (Noguchi)	1
Tubercle bacillus	0
Discharge for :—	
Gonococcus	226
Spirochætes	11
Fæces for—	
Dysentery	1,101
Enteric group	254
Helminths	512
Pathological specimens	19
Purulent discharges	76
Peridental smears	9
Septic fluids	58
Sputum :—	
General	448
T.B.	492
Throat swabs :—	
Diphtheria, &c.	416
Special tests	23
Vaccines :—	
Preparation of autogenous	125
Preparations in bulk :—	
Influenza	25,000 c.c.
Gonococcus	800 c.c.
Staphylococcus	2,700 c.c.
Streptococcus	1,000 c.c.
T.A.B.C.	20,000 c.c.
Cholera	2,000 c.c.
Acne	1,200 c.c.

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TABLE XXXI.—VACCINATION RESULTS DURING 1922.

Area.	Primary Vaccinations.						Re-vaccinations.						Total number vaccinated.
	1 Vesicle.	2 Vesicles.	3 Vesicles.	4 Vesicles.	Failure.	Total.	1 Vesicle.	2 Vesicles.	3 Vesicles.	4 Vesicles.	Failure.	Total.	
United Kingdom -	12	126	103	418	27	686	286	723	2,405	4,712	1,259	9,385	10,071
Mediterranean Littoral	7	8	35	16	8	74	12	56	90	104	128	390	464
Iraq - - - -	0	0	3	0	1	4	5	5	7	0	167	184	188
India - - - -	0	1	9	4	0	14	3	26	111	343	206	689	703
Total Abroad - -	7	9	47	20	9	92	20	87	208	447	501	1,263	1,355
Grand Total - -	19	135	150	438	36	778	306	810	2,613	5,159	1,760	10,648	11,426
Percentage of Total -	2·4	17·4	19·3	56·3	4·6	100	2·9	7·6	24·4	48·5	16·5	100	—

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53. Surgical Operations during 1922.

TABLE XXXII.

Operation.	Place of Operation.			Totals.
	R.A.F. Sick Quarters.	R.A.F. Hospitals.	Royal Navy, Army and other Hospitals.	
Removal of tumours, cysts and bursæ	9	53	23	85
Evacuation of abscesses	137	95	90	322
Suture of wounds	71	17	18	106
Varices	—	3	4	7
Removal of nails	14	57	24	95
Reduction of fractures or dislocations	25	24	39	88
Wiring or plating fractures	—	2	6	8
Amputations	4	16	16	36
On the eye	6	5	14	25
On joints	2	32	17	51
Removal of tonsils or adenoids	—	11	3	14
For hernia	—	51	28	79
On ear and mastoid process	—	2	1	3
Submucous resection	—	33	17	50
For appendicitis	1	50	51	102
Other abdominal operations	—	16	16	32
For hæmorrhoids	—	17	20	37
Circumcision	11	23	34	68
For hydrocele	—	5	3	8
For varicocele	—	10	5	15
All other operations	14	141	110	265
Total	294	663	539	1,496

Dental Treatment.

54. Table XXXIII. shows a summary of dental treatment carried out during 1922. Figures from Iraq were only available for the last three months of the year, and are therefore excluded from the table.

TABLE XXXIII.—SUMMARY OF DENTAL TREATMENT, 1922. (IRAQ EXCLUDED.)

Nature of treatment.	United Kingdom. (Average strength, 21,074.)		Mediterranean Littoral. (Average strength, 3,768.)		India. (Average strength, 1,703.)	Total. (Average strength for the year, 26,545.)	
	By R.A.F. dental surgeons.	By army, navy, or civilian dental surgeons.	By R.A.F. dental surgeons.	By army, navy or civilian dental surgeons.	By army or civilian dental surgeons.	By R.A.F. dental surgeons.	By army, navy, or civilian dental surgeons.
Fillings	12,303	953	1,697	349	673	14,000	1,975
Scalings	1,701	165	134	38	118	1,835	321
Extractions	9,346	790	1,903	181	667	11,249	1,638
Root fillings	1,063	132	131	75	126	1,194	333
*Number of dentures supplied.	408 (318)	72 (30)	88 (72)	6 (5)	41 (30)	496 (390)	119 (65)
Number of repairs to dentures.	141	37	53	12	15	194	63
Remodels	31	7	34	3	2	65	12

* Figures in brackets are the actual number of patients supplied with dentures.

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Princess Mary's Royal Air Force Nursing Service.

55. Fourteen cases of sickness from an average strength of 65 were admitted to hospital during the year. One case was invalided from the service. The average duration of each case was 9·4 days. There were no deaths.

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CHAPTER V.—PHLEBOTOMUS OR SANDFLY FEVER.

1. In the summer of 1921 the Royal Air Force Sandfly Fever Commission commenced its investigations. The researches carried out that year showed that a small percentage of so-called sandfly fever cases harboured in their blood-stream a *leptospira*, morphologically indistinguishable from *Leptospira icterohæmorrhagiæ*. The simple nature of the disease was in question, as most of the cases from which the *leptospira* was isolated were accompanied by a relatively severe type of fever, and some even developed jaundice. It was decided that the only feasible way to attack the problem was to endeavour to establish definitely the mode of transmission of sandfly fever, and to reproduce it in an area free from that fever.

2. Formerly, many points in the etiology of this disease have, without full confirmation, been accepted as correct. The *phlebotomus*, rightly accused of transmitting the disease, had never had its life-history fully elucidated, nor had it ever been bred in captivity from ovum to imago. Therefore, it was first necessary to re-study the habits of *phlebotomi* and to attempt to rear these flies in captivity: fortunately, the latter was accomplished in 1922 in Malta, and now several hundreds of the flies have been bred through to maturity.

3. From a close study of the natural habits and habitats of the *phlebotomus*, confirmed by experiments, it was found that the imago hatched out between sunset and dawn; usually between midnight and 4 a.m., when the atmospheric humidity was about 90 to 100 per cent. The wings were first crumpled up and held horizontally, but dried in the course of a few hours, the period depending on the amount of moisture in the air. When dry, the wings were raised almost vertically over the body, and the insect was able to fly. By this time the mouth parts were hardened, and a blood-feed was taken within the first twenty-four hours of adult life. Copulation was never observed prior to the second day of the life of the imago; it always took place several hours after a blood-feed, when the process of digestion had lessened the weight of the abdominal contents, and so allowed the posterior end of the abdomen of the female to be raised off the surface on which the fly rested. The act of copulation took place end to end, with the heads facing in opposite directions, and occupied twenty to thirty minutes. The duration of pregnancy was six to ten days; then oviposition occurred over a period of two to three days, the fly usually dying during the process.

4. The ovum measured 0·385 mm. in length by 0·12 mm. in breadth, was brown in colour and sausage-like in outline, and convex dorsally and concave ventrally. Eight days after oviposition the transversely segmented embryo could be seen

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through the eggshell; on the ninth day the outline of the embryo was more marked and the caudal bristles were distinct. Usually the larva hatched out within a few hours of the caudal bristles being clearly visible—just prior to the hatching a slight side to side rolling motion of the ovum was observed. The rupture of the ovum commenced at the dorsum of the anterior end, the emerging larva being colourless, except for the yellowish-brown mouth parts and egg-tooth, and the black caudal bristles. Four distinct stages were found in the larval life with a complete moult between each (*see* Table No. XXXIV, page 66).

5.—(i) *The first instar* lasted on an average for seven days; the characteristic features were a single pair of caudal bristles and the presence of an egg-tooth on the dorsum of the head, just anterior to the neck.

(ii) *The second instar* occupied the seventh to twelfth days of larval life, and was characterised by the possession of two pairs of caudal bristles and a brown pigmentation of the dorsum of the distal quarter of the last segment of the body.

(iii) *The third instar* lasted from the twelfth to seventeenth days of larval life. This stage had two pairs of caudal bristles, but could be distinguished from the second stage by the brown pigmentation of the whole of the dorsum of the last segment of the body, and by the yellowish coloration of the body hairs.

(iv) *The fourth and last instar* lasted from the seventeenth to twenty-sixth days, and was easily recognised by the relatively large size of the larva and the dark-brown pigmentation of the whole dorsum of the last body segment and the central portion of the penultimate segment. The body hairs were long and of a dark yellow colour.

6. One to two days prior to each moult the larva emptied its gut, and its body became moist and bloated. Immediately after each moult the larva was invariably pearly white, except for the brown coloration of its mouth parts and the black pigmentation of its caudal bristles. The head and body darkened within two hours, by which time the larva was moving freely and feeding voraciously. The whole larval life was completed in four weeks.

7. Pupation occurred between the twenty-fifth and twenty-eighth days of larval life, the pupa emerging from the dorsum of the first and second body segments of the larva. The discarded larval skin enveloped the two distal segments of the pupal body like a wrinkled stocking, and was clearly recognised by the yellow body hairs and two pairs of black caudal bristles. The duration of pupal life was usually nine days.

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TABLE XXXIV.—TABULAR STATEMENT OF OBVIOUS POINTS OF DIFFERENCE IN THE FOUR STAGES OF THE LIFE-CYCLE OF THE LARVA OF *PHLEBOTOMUS PAPATASII*.

Instar.	Days of larval life.	Characters which alter throughout each instar.				Characters which remain constant throughout each instar.						
		Length of body including head.		Width of body.		Width of head.	Length of body hairs.	Colour of body hairs.	Pairs of caudal bristles.	Length of caudal bristles.		Pigmentation of dorsum of posterior segments of body.
		Beginning of instar.	End of instar.	Beginning of instar.	End of instar.					Inner pair.	Outer pair.	
		mm.	mm.	mm.	mm.	mm.	mm.			mm.	mm.	
1st -	1 to 7	0·46	1·06	0·09	0·15	0·09	0·02	White	1	0·40	—	Termination of last segment
2nd -	7 to 12	1·06	1·68	0·17	0·22	0·13	0·04	White	2	0·52	0·30	Distal quarter of last segment.
3rd -	12 to 17	1·70	2·50	0·24	0·33	0·15	0·08	Yellow	2	0·76	0·45	Whole of last segment.
4th -	17 to 26	2·55	3·78	0·36	0·52	0·22	0·16	Yellow	2	1·06	0·75	Last, and central part of penultimate segment.

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8. The whole life-cycle of *Phlebotomus papatasii* took from seven to eight weeks (during July and August) under the following meteorological conditions :—

Maximum atmospheric temperature varied between 78° and 88° F. (except from 9th to 15th August, when temperature was 90° to 94° F.).

Minimum atmospheric temperature varied between 69° and 76° F. (except from 9th to 17th August, when temperature was 78° to 80° F.).

Mean atmospheric temperature varied between 75° and 82° F. (except from 9th to 15th August, when temperature was 82° to 87° F.).

Mean daily humidity varied between 60 per cent. and 90 per cent. (except from 8th to 13th August, when humidity was 50 per cent. to 60 per cent.).

Earth temperature (4-ft. tube) varied between 70° and 77° F.

Water temperature (near shore, depth 4 ft.) varied between 70° and 80° F.

Wind force (Beaufort scale) was :—Force 1 or less on 37 days. Force 2 on 20 days. Force 4 on 4 days.

9. Special boxes (measuring 12 in. by 8 in. by 8 in.) were constructed to breed the *phlebotomi* in captivity. These boxes were made of wood, with all joints securely dovetailed together; the front was of glass, held in position by putty. A square opening, large enough to admit an arm, was cut in the centre of either end. The inside of the box, except over the glass front and the two side openings, was carefully lined with fine butter-muslin, which was glued to the wood. After this, the inside was white-washed, to prevent the flies from sticking to the sides and to make them easily visible. Sleeves of butter-muslin were fitted to the side openings to allow of manipulations inside the box without any danger of the flies escaping. A tightly fitting aluminium tray was fitted to the bottom of each box to prevent moisture being absorbed by the wood.

10. The actual breeding-grounds were constructed from small pieces of porous Maltese coralline limestone, varying in size from that of a peanut to that of a walnut, imported garden earth of ordinary Maltese earth and nitrogenous organic matter in the form of the fæces of lizards, crushed insects or dried human blood. Prior to being placed in the boxes, all these constituents were sterilised for two hours at 140° C. in the hot-air oven. The earth and whatever form of nitrogenous matter used in any particular box were mixed together, and the larger lumps broken up. Some of the stones were scattered over the bottom of the box, and the earth mixture was dusted over them to a depth of about a quarter of an inch. In the two back corners of the box the stones were heaped up in the form of mounds, and some of the earth mixture scattered between

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each layer of stones. The completed mounds, three to four inches in height, were covered with a layer of the earth one quarter of an inch thick. In some instances, one or two large pieces of limestone were placed in the box to aid the larvæ to find a suitable site for pupation. This was not found to be a necessary provision for the insect to complete its life-cycle.

11. Water was added to each box daily after sunset, in sufficient amount to moisten the lower levels of the mounds; the exact amount varied with the stage of the life-cycle. For oviposition the soil was kept well moistened; during the non-motile stages of development (maturation of the ovum and pupal life) more water was added as the larva could move about and select a level with the necessary amount of moisture. On an average from 15 c.c. to 20 c.c. of water were added daily; if more water than this was added the rate of development was retarded. The cages were kept in baby incubators at a temperature of 80° F. In this manner three generations of flies have been reared.

12. From the flies thus reared the virus of phlebotomus fever has been shown to be transmitted from generation to generation of *Phlebotomus papatasii*. This may be effected in two ways. Either it is transmitted by heredity or the larvæ infect themselves in the breeding grounds by eating the excreta or the dead bodies of the parent flies. It is definite that the infection of the fly takes place in the breeding grounds, and it follows that prophylactic measures against the fever must be directed upon the fly, especially in such places. A sound knowledge of the habits and habitats of the *phlebotomus* is the keystone to successful prophylaxis.

13. Briefly, the findings of the R.A.F. Sandfly fever Commission in Malta were :—

(i) That *Phlebotomus papatasii* first appeared in the middle of May and disappeared in the second week of October.

(ii) There were two distinct waves in the incidence of the *phlebotomus*—the first in June, the second early in September. This coincided with the waves of phlebotomus fever recorded in this and previous years.

(iii) The decrease in the number of the flies in July and August was not due to their being killed off by the hot weather, but due to the fact that during these months most of the summer brood were in the ovum, larval or pupal stage.

(iv) The length of life from ovum to imago was about seven weeks, and from ovum to egg-laying of imago was about nine weeks.

(v) The complete life-cycle of *Phlebotomus papatasii* was shown to be in summer :—

Ovum stage about 9 days.
Larval stage about 28 days.
Pupal stage about 10 days.
Imago stage about 14 days.

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(vi) The larval life was proved to consist of four distinct stages.

(vii) Various interesting points in the bionomics of the fly were demonstrated :—

(*a*) That only the females sucked blood. This held good for the four species—*P. papatasii, P. perniciosis, P. nigerrimus and P. minutus*—found in Malta.

(*b*) That *P. papatasii* was the species most commonly found indoors and to feed on man.

(*c*) That all species were found to feed on fowls.

(*d*) That *P. minutus* remained chiefly out-of-doors and was the only species found to feed on cold-blooded animals (lizards).

(*e*) That the time taken for a blood feed by a previously unfed fly was about two minutes—whereas a fly which had fed previously, especially if pregnant, took five to ten minutes. These observations helped to explain the infection with phlebotomus fever of volunteers who were bitten by flies which had previously fed on other fever-free volunteers in England. The volunteers first bitten by previously unfed flies did not contract fever.

(*f*) That as regards the food supply—female flies required blood, otherwise they did not become pregnant. Females fed on earth and organic debris never produced mature ova. The male fly lived for as long as fourteen days on earth and water. The larva flourished on the nitrogenous débris of insects.

(*g*) That each stage of the life-cycle was governed by such atmospheric conditions as temperature and humidity. Moreover, the earth temperature was important. The insect hibernated with an earth temperature below 65° F. or if there was an excess of moisture.

(*h*) That the optimum temperature for the hatching out of the imago was between 70° and 90° F.

(*i*) That hibernation took place in the 4th larval stage.

(*j*) That the vulnerability of the insect differed in its various stages. This was important in connection with prophylaxis.

(*k*) That *Phlebotomus papatasii* bred readily in any soil where there was the requisite amount of nitrogenous matter, moisture and shade. A considerable number bred in the earth near walls and buildings—situations where other insects and reptiles congregated and left their fæces and dead remains (food supply for the larva); moreover, moisture, condensing on walls and buildings at night, gravitated to their bases (moisture for the larva).

(viii) That *phlebotomi*, early in the season, prior to the appearance of any cases of the fever were infective.

(ix) That *phlebotomi* which had fed on cases of the fever could infect man even as early as 24 hours after the blood feed,

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whereas Doerr and Birt stated that an interval of 6 to 7 days was necessary before the flies became infective.

(x) That *phlebotomi* either inherited the fever or else became infected in the larval stage by feeding on the dead remains or fæces of their parents.

(xi) Regarding the fever in man—

(*a*) That the incubation period varied—probably with the amount of saliva inoculated (dose of virus). Early in the season the period was 16 days, later it was five days.

(*b*) That there were two types of fever :

(1) typical, accompanied by a leucopenia ;

(2) atypical (dengue-like), accompanied by either normal count or a leucocytosis. Some of these cases had rashes.

(*c*) That such symptoms as bronchitis, diarrhœa and colic were due to congestion of weakened internal organs, produced partly by the fever and partly by the increase in the atmospheric humidity which occurs in the phlebotomus season.

(xii). That certain prophylactic measures were very useful in combating the *phlebotomus*.

Summary of Prophylactic Experiments carried out in Malta.

14. *Abolition of the breeding grounds.*—The levelling and rendering impervious of the surface of the ground, and the facing and pointing of walls and buildings, materially reduced the number of *phlebotomi* in the camp. These measures were only carried out for a distance of fifteen yards beyond the huts ; had this distance been extended to fifty yards the reduction in number of the flies would have been greater. That this further reduction would have occurred was evident from the following incident. In one part of the camp flies collected despite these prophylactic measures, and a survey of the ground around showed a *phlebotomus* haunt about twenty yards from the huts. This was treated, and the fly incidence dropped immediately.

15. *Destruction of the adult fly.* (*See Chart No.* 6.)—(i) "Swatting" of the *phlebotomi* which gathered in the corners of each hut was a very satisfactory method of killing large numbers of these flies. Even when kits were allowed to remain on the shelves, fifty per cent. of the total number of flies in a hut collected in the corners, and were easily killed.

(ii) Spraying by means of such an instrument as a Meyer's knapsack sprayer was a very efficient means of dealing with these flies. A one per cent. solution of cresol acted best. This prophylactic measure had the advantage of acting against other insects such as fleas, house flies and even bed bugs.

(iii) Fumigation on a large scale had little effect on the *phlebotomus*.

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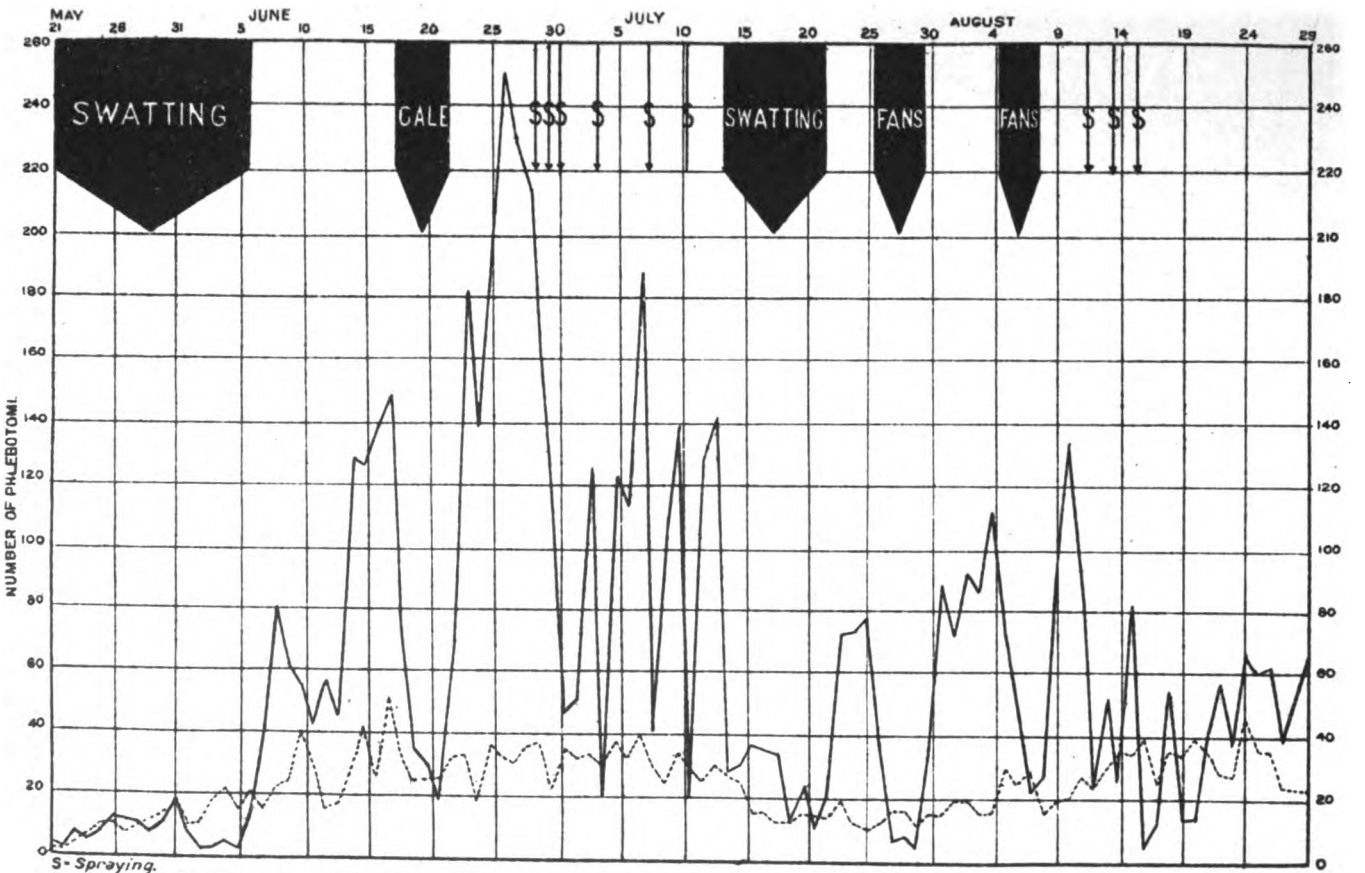
To face page 70.

CHART VI. SHEWING THE INCIDENCE OF PHLEBOTOMI AT THE ROYAL AIR FORCE STATION, CALAFRANA MALTA, DURING THE SUMMER 1922.
THIS CHART SHEWS THE EFFECT OF CERTAIN PROPHYLACTIC MEASURES.



S - Spraying.
The Phlebotomus incidence in Hut A4 is represented by the continuous Line
The average Phlebotomus incidence in five huts strictly comparable to Hut A4, but which were swatted daily, is represented by the dotted Line.

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TABLE XXXV.—SHOWING THE EFFECT OF LARGE AND SMALL FANS ON THE NUMBER OF *PHLEBOTOMI* IN A HUT AT MALTA.

Small fans running.		Large fans running.	Small fans		
			Running.	Stopped.	
Time.	No. of *Phlebotomi.*	No. of *Phlebotomi.*	No. of *Phlebotomi.*	Time.	No. of *Phlebotomi.*
(1)	(2)	(3)	(4)	(5)	(6)
				Stopped.	
At start -	138	137	170	12 hours	60
After 1 hour -	93	125	102	24 ,,	43
,, 5 hours	76	99	63	36 ,,	147
,, 9 ,,	74	110	78	48 ,,	111
,, 24 ,,	57	156	74	60 ,,	137
,, 48 ,,	27	170	45	72 ,,	89
,, 72 ,,	17	—	18	84 ,,	158
				96 ,,	118
,, 81 ,,	5	—	—	111 ,,	137

Counts were made during a period from 10.30 a.m. 26.7.22 to 10.30 a.m. 8.8.22; the period of 13 days being divided into four stages:—

(*a*) Small fans running from 10.30 a.m. on 26.7.22 to 7.30 p.m. on 29.7.22, 81 hours (*vide* column 2).

(*b*) No fans running from 7.30 p.m. on 29.7.22 to 10.30 a.m. 3.8.22, 111 hours (*vide* column 5).

(*c*) Large fans running from 10.30 a.m. on 3.8.22 to 10.30 a.m. 5.8.22, 48 hours (*vide* column 3).

(*d*) Small fans running from 10.30 a.m. on 5.8.22 to 10.30 a.m. 8.8.22, 72 hours (*vide* column 4).

Prevention of Biting.

16.—(i) *Removal of hiding places in sleeping quarters.*—Kits, cobwebs and large articles of furniture which could not be easily kept clean gave protection to *phlebotomi*. Their removal reduced the number of *phlebotomi* in the huts and made the other prophylactic measures more easy to carry out.

(ii) Cotton-net of at least forty-five meshes to the square inch had to be used to attain proper protection.

(iii) Repellents aided to a certain extent. Paraffin and camphor were the best.

(iv) Air-currents had a marked effect on *phlebotomi*, as was shown by the great decrease in the number of flies whenever a strong wind was blowing, and, also, by the few flies found in the upper storeys of buildings. As regards electric fans, small fans of eighteen inches span produced the strongest currents and apparently gave the best results. This type of fan acted chiefly in the upper part of the hut and prevented flies from settling there after they had had a blood-feed on the men below. There

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was no evidence to show that the flies did not enter the hut, bite man and depart as they had come. In fact, several of the men affirmed that they were bitten despite these small fans. Had the small fans been mounted three or four feet above the floor level, it would have been difficult, if not impossible, for the flies to bite the occupants of the hut. However, the small fan experiment proved definitely that such fans could prevent *phlebotomi* from collecting in a room provided the walls were kept clear of hangings. On the other hand, large fans of fifty-four inches span prevented the flies, to a certain extent, from biting the men but failed to stop them entering, leaving or collecting in the hut. (Table No. XXXV, page 71.)

Recommendations for a Campaign against the Phlebotomus.

17. From a survey of the foregoing experiments it is possible to make certain recommendations for a campaign against the *phlebotomus*. No one measure can be expected to produce complete eradication—each is dependent to a certain extent on some other; and, to attain success, as many measures as possible should be brought into use. It cannot be too strongly emphasized that the campaign is an even more arduous one than that which is being waged against the mosquito; the breeding places of *phlebotomi* are as numerous and more difficult to treat, while the smaller size of the insects adds greatly to the difficulty. Half-hearted measures will inevitably end in failure. The degree of success will depend largely on the situation and local conditions. It is realized that the air force station at Calafrana, where the experiments were carried out, is an ideal spot for a campaign against the *phlebotomus*, owing to its comparatively isolated position, and to the fact that it is bounded by the sea on three sides. In other places certain of the measures recommended will be impracticable or useless, but some, such as the use of electric fans or punkahs, swatting and spraying, will be of great value anywhere. Further researches by medical officers in the areas concerned, on lines similar to those detailed above, are necessary to attain the maximum of success.

War on the Insect in its various Stages.

18. *Abolition of breeding grounds.*—Certain facts have emerged from the study of the life-history of the *phlebotomus* regarding the conditions necessary for its successful breeding; briefly, the requirements are :—

(*a*) organic matter,
(*b*) a certain amount of moisture,
(*c*) a definite range of temperature.

Of these factors the first can be influenced most, the second is more difficult to deal with, while it is impossible to control the third. The object to be aimed at is to eradicate all breeding places over as large an area in and around dwellings as is practicable. Every inch of the ground in this area must be treated.

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19. *Treatment of the ground in the camp area.*—(i) Broken ground.—The ground surface should first of all be levelled—no areas of waste land should be permitted to remain within 30 yards of any dwelling. The surface should, wherever possible, be made up with small stones or road metal, which should be rolled in with a heavy roller. Places inaccessible to the roller, especially the junction of buildings and walls with the ground surface, should be thoroughly rammed in by hand. In those places where the surface is of sand, some other method of consolidation must be used, which will depend on the local conditions. After the surface has been made level, some dressing must be applied to render it impervious and to prevent crumbling. This dressing will vary with the character of the soil, the cost in the locality and the means of application. The commoner dressings are concrete, tar or some crude oil. Concrete is undoubtedly the best dressing so far as the eradication of *phlebotomi* is concerned. There are undoubtedly certain disadvantages in connection with the use of this material. The initial cost is great, but considering that repairs are necessary only at long intervals, there is ultimate economy. It tends to reflect heat, and the glare from its surface is injurious to the eye. This element of glare could be partly remedied by the use of green or black concrete. Despite these drawbacks, concrete is undoubtedly the best surface dressing for a station such as Calafrana. Tar makes an excellent dressing and would probably be more suitable for sandy soils. It is also cheaper than cement, but it does not last so long and the surface would require to be resprayed at yearly intervals. The cost of tarring worked out approximately at $1\frac{1}{2}d.$ a square yard —this being the total inclusive cost. The objection has been raised that during the hot weather the surface would become sticky; in Malta during the hottest weather experienced this was not found to be so; the tar sinks into and binds together the porous soil. Like cement, it reflects the heat, but the black colour is more restful to the eye. Crude oil and waste engine-oil could be used in temporary stations. This could be sprayed over the ground from watering cans, and, if properly done, would be quite effective. It would, however, have to be done frequently and is not suitable for a permanent camp, except as a dressing to apply to waste areas beyond the zone of active treatment. This spraying tends to kill off larvæ and pupæ, and should be carried out weekly. Apart from lessening the incidence of the *phlebotomus*, the above measures will help to keep down dust and dust-borne diseases.

(ii) Prevention of breeding in walls and embankments.—Loose stone walls should be demolished in the camp area, and boundary walls should be replaced by iron or wire fencing, or by properly constructed stone walls. Old stone walls, which cannot be removed, should be repaired and pointed, and tarred the lower three feet. Loose banks should be faced with stones, pointed and tarred. If the embankments are of such a size

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that the foregoing recommendation is impossible, they should be built up with stones and the interstices filled with earth, rammed tightly home. In an endeavour to prevent *phlebotomi* from breeding in such a bank, pennyroyal or thyme, both of which act as repellants to these insects, should be thickly planted thereon, or the surface should be sprayed weekly with waste engine oil.

(iii) Construction and maintenance of buildings.—(*a*) Walls of buildings should be properly faced and all cracks filled up with cement. To preserve the stone, the lower three feet of the wall should be tarred. The frames of windows and doors should fit accurately, and any crevices produced by such conditions as warping of the frames should be immediatcly repaired. Private individuals may attain a considerable degree of protection by covering the open windows with butter muslin of 45 or more meshes to the square inch; this material should be carefully tacked to the window frame. All ventilators of buildings should be accessible and of large size; their corners should be as few as possible and rounded off to prevent accumulation of dust and dirt. They should be cleaned daily and have their sides frequently rubbed with a rag moistened with paraffin. The frames and fly-proof netting of ventilators must be kept in good repair. Openings in walls for the ingress or egress of pipes should have careful attention. Should a certain amount of space be required to allow for expansion of the pipe, the orifice left should be guarded with finely meshed netting. It would be an advantage to conduct pipes through a ventilator so as to have room to clean the space left around them. Where possible the roofs of buildings should be of stone. Wooden roofs gradually gather moisture, partly by leakage of water through the canvas or other material used to cover them, and partly by absorption of the condensation moisture which gathers on their inner surface. The amount of moisture absorbed in Scirrocco weather is considerable. Dust lodges in the interspaces between the planks forming the roof, and with the moisture provide the necessary conditions for the breeding of the *phlebotomi* and other insects. These insects gradually find a home in the stone work, especially in crevices between the stones forming the walls. Gales, which are of frequent occurrence in Malta, exert considerable pressure on these wooden roofs and their supporting joists; the cement binding together the stones in the vicinity of these joists breaks away, and, by a vicious circle, the building deteriorates. The use of temporary wooden roofs is much to be deprecated. Knowing the amount of moisture necessary for the development of the *phlebotomus* in its various stages, proper provision should be made for the disposal of all waste water, rain and dew. Eaves-gutters should be fitted where required, to prevent water dripping to the ground adjoining the house walls. Further, as numerous *phlebotomi* are found to breed in the ground in the immediate vicinity of buildings, it is necessary to carry a cement channel around the foot of each building to collect condensation and other

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water. These channels should be properly aligned, kept clear and should discharge into a well constructed drain. The habit of throwing waste water on the ground to percolate away should be strictly forbidden. All woodwork, walls and ceilings of buildings should be painted, distempered, tarred or whitewashed yearly, preferably at the end of the rainy season. These measures preserve the surfaces treated and tend to kill off any eggs or other forms of insect life infesting them.

(*b*) It cannot be too strongly emphasized that, in tropical and sub-tropical climates, gardens in the immediate vicinity of buildings should not be permitted from a sanitary point of view. The daily watering of this manured soil provides the moisture necessary for the breeding of the *phlebotomus*, while the foliage gives shelter to innumerable pests. Creepers on the walls of buildings should be strongly condemned—they are injurious to the soft limestone forming the walls, and aid midges and mosquitoes to reach the upper storeys.

(*c*) The keeping of fowls or similar animals within the area of the camp should not be permitted. Fowl runs, formed of soft ground containing much organic material and repeatedly moistened, are ideal breeding places for *phlebotomi*, especially as these insects feed on the blood of fowls and other birds. As such animals are known to suffer from spirochætal diseases they may possibly act as a reservoir for infection.

(*d*) Until more is known of the limits of flight of the *phlebotomus*, the area of the camp treated should be as extensive as possible. To this end every attempt should be made to have the parade grounds, playing fields, &c., adjoining the men's quarters, for by this means a large area of ground around the camp could be rendered unsuitable for the breeding of the *phlebotomus*. Moreover, air currents would have full play upon the camp.

(*e*) Building operations and other works which disturb the surface of the ground should, if possible, be done in the cold weather, otherwise crannies are created in which all manner of insects will breed. Any breakage of the surface, which does occur in the summer, should be sprinkled with crude oil and speedily closed up.

Destruction of the Adult Fly.

20. It has been shown that war on the adult fly has every hope of success if carried out methodically and diligently.

(i) Swatting, though a somewhat laborious method, is of undoubted value as a part of the campaign. By breaking a camp up into small areas, (*e.g.*, flights) each with a swatting party, the amount of individual labour will be considerably reduced. The method employed should be that outlined in the foregoing pages. Each swatting party should consist of two men, supervised by an N.C.O., and should be provided with an 8-foot ladder and suitable

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material for making swatters. The swatting should be done daily during the hour before sunset. The medical officer in charge of the station can easily keep a check on this work by means of surprise visits—any neglected corners are detected immediately.

(ii) Spraying should be carried out at least twice weekly, by the party detailed to do the swatting; a one per cent. solution of cresol is the best fluid for this purpose, and should be applied by either the Meyer's knapsack or the Mackenzie's fly-spray. The spraying should be started in the corners of each room, first at the ground level and then working up the wall to the ceiling. Ventilators and all spaces behind the larger articles of furniture should be well treated, for many *phlebotomi* shelter in such situations. Daily treatment is to be recommended, if the cost can be defrayed, and then swatting could be dispensed with. It is necessary to bear in mind the lethal action that cresol spraying has on flies, fleas and insects in general.

Prevention of Biting.

21.—(i) The removal of hiding places of *phlebotomi* in sleeping quarters renders the disinfestation of any hut easier, for these insects, deprived of other places of shelter, gather in the corners of the room, where they can be swatted or sprayed readily. The chief hiding places are in the kits, and behind cobwebs and large articles of furniture. All huts should be thoroughly cleaned daily—cobwebs removed, ventilators cleared, floors and especially corners and areas behind large articles of furniture washed. To aid the cleansing, all large pieces of furniture should be raised about four to six inches off the floor on legs, and an airspace left between the article and the wall. The addition of 0·5 to 1 per cent. of cresol, or a little paraffin, to the cleaning water is to be recommended.

(ii) Cotton nets of forty-five or more meshes to the square inch give a considerable amount of protection against the bites of *phlebotomi*. The netting may be fastened to the frames of windows to keep these midges from entering the rooms, or erected over and around beds to give protection to the occupant. Unless these nets are kept in good repair and properly tucked in before sunset they will probably do more harm than good. All cases of phlebotomus fever should be compelled to sleep either under such nets, or in a phlebotomus-proof room, for although this insect has been shown to inherit or becomes infected in its breeding haunts with the virus of the fever, passage from fly to man, and *vice versâ*, is liable to exalt the virulence of the disease.

(iii) Repellents, such as paraffin or camphor, can be used as an additional protection against midges. Paraffin smeared over ventilators, bedsteads and the lower corners of rooms aids in part

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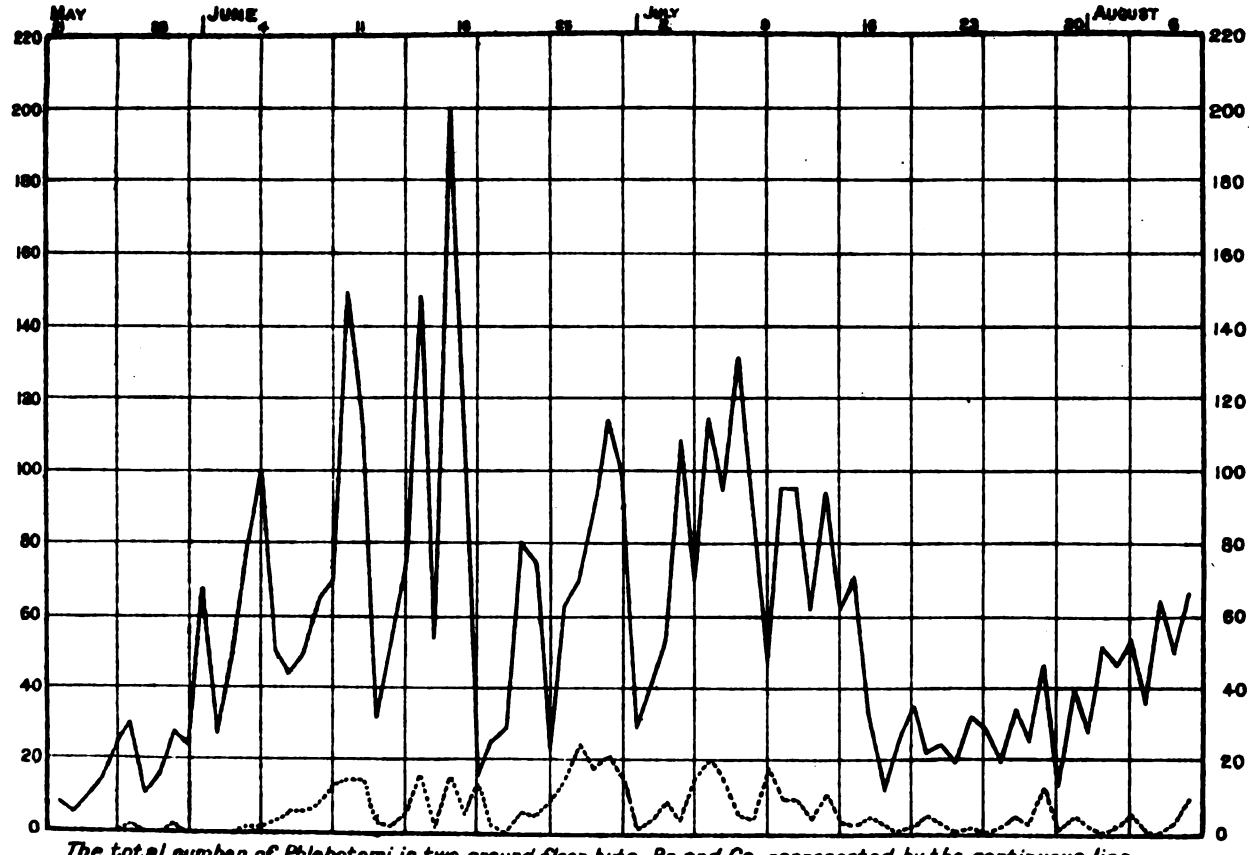
CHART VII. SHEWING THE INCIDENCE OF PHLEBOTOMI IN DIFFERENT STOREYS OF BUILDINGS.



The total number of Phlebotomi in two ground floor huts, B2 and C2, represented by the continuous line.
The total number of Phlebotomi in two first floor huts, B1 and C1, represented by the broken line.

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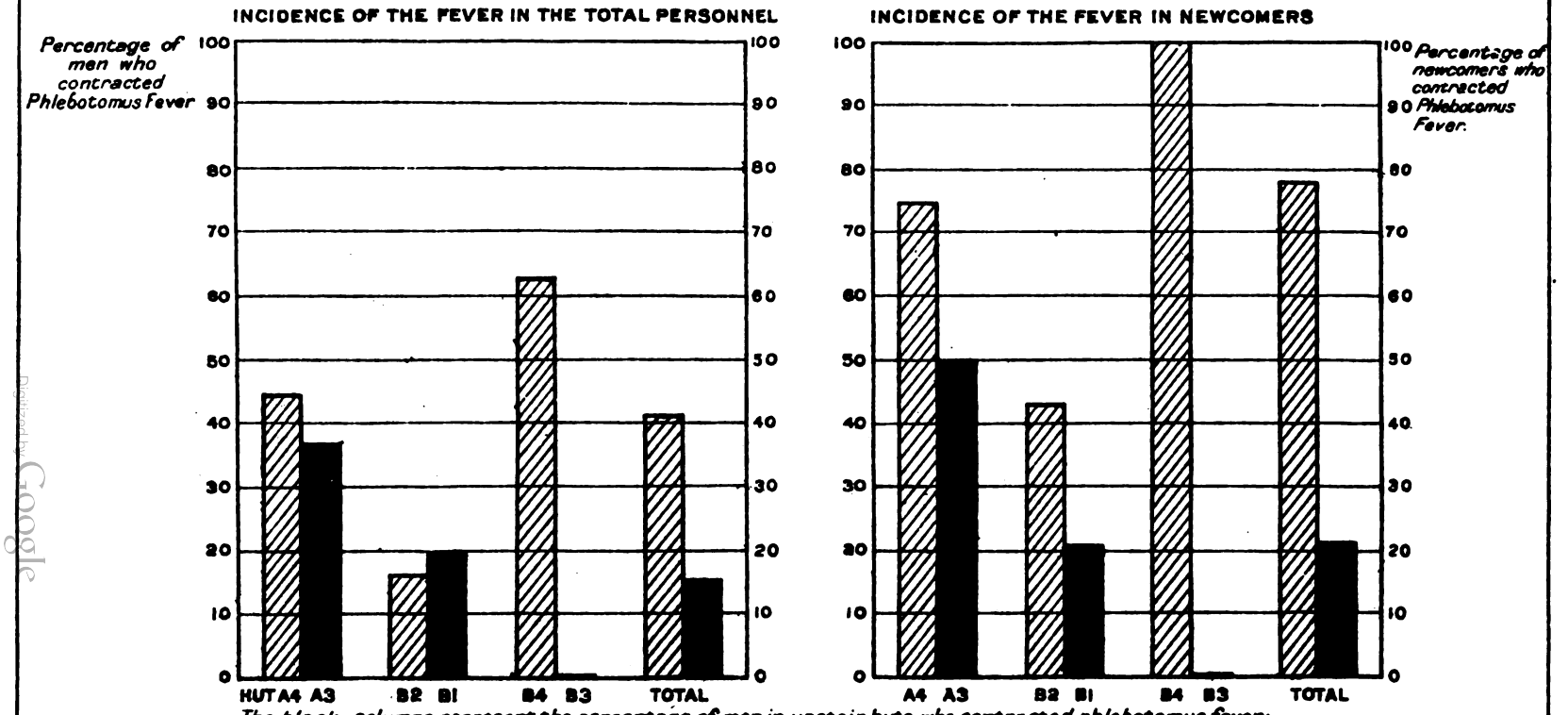
CHART VIII. DIAGRAMMATIC REPRESENTATION OF THE PERCENTAGE OF CASES OF PHLEBOTOMUS FEVER OCCURRING IN UPSTAIR AND GROUND FLOOR HUTS.



The black columns represent the percentage of men in upstair huts who contracted phlebotomus fever; The shaded columns represent the percentage of men on the ground floor of the same huts who contracted the fever.

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by repelling, in part by killing the ova or larvæ of any insects with which it comes in contact; spread lightly over the skin, it is of considerable efficacy, but somewhat objectionable owing to its odour and greasiness. Camphor can be used in bed either in a sachet placed under the pillow, or worn as an amulet around the neck.

(iv) Air currents, natural and artificial, should be fully utilised. If possible, all sleeping quarters should be upstairs; in this manner the maximum effect of natural air currents is obtained. The advisability of this measure is shown by the relatively few *phlebotomi* and cases of fever occurring in the upstairs huts compared to those occurring on the ground floors (Charts Nos. 7 & 8). The ground floor rooms should be used for such purposes as recreation rooms, messes, canteens, wash-houses, bath-houses and kitchens. The distance between huts should be as great as possible, certainly greater than the height of the building; moreover, there should be space for the free circulation of air currents all round each hut. The part or complete blockage of passages between huts by annexes should not be allowed. It is recommended that a combination of large and small types of electric fans should be used for large barrack rooms. This would entail the use of six fans, four small and two large, for a floor space of about a thousand square feet. Electric fans are not a measure directed solely against phlebotomus fever. It should be remembered that the *phlebotomus* is not injurious only as a transmitter of that fever, but also by its irritating bites it causes considerable loss of sleep, septic spots and perhaps oriental sore. Fans greatly aid in lessening these disease conditions, and by repelling mosquitoes decrease the incidence of malaria; in addition, their use in assisting evaporation and so reducing heat-effects is well known. Nevertheless, electric fans have certain drawbacks; their noise may interfere with sound sleep and the draught they set up may act injuriously on the chest or abdomen—for these and economical reasons the smaller the number of fans used in any room the better. Although these considerations lead to the recommendation of the general use of fans abroad, it is realised that, however efficiently controlled, they will not absolutely prevent man being bitten; they should be used in conjunction with the various other prophylactic measures detailed above. It is difficult to draw up a definite scale of equipment of fans for all rooms without knowing the construction and size of each; for instance, rooms on the second storey with a relatively better natural ventilation and consequently smaller number of flies will need fewer fans than ground-floor rooms. The easiest solution of the problem is to give figures for rooms of various sizes; the numbers given are those strongly recommended for adoption by units serving in Iraq, India, Palestine, Egypt and the Mediterranean.

(v) A scale of electric fans recommended for R.A.F. dwelling-rooms in tropical and sub-tropical climates is given in Table XXXVI on page 78.

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TABLE XXXVI.—SCALE OF FANS RECOMMENDED.

Floor space of room in square feet.	No. of large ceiling fans (54-ins. span) required.	No. of small desk fans (18-ins. span) required.
1,500 - - - -	3	2
1,000 - - - -	2	2
500 - - - -	1	1
Less than 500 - - -	—	1

The position of the fans will have to be modified according to the room and its contents. Direct draught on to the body must be avoided. In a room of a 1,000 to 1,500 square feet floor space the large fans should be placed so as to divide the ceiling into three or four equal parts, depending on whether two or three fans are used. The blades of the fan should revolve at a height of ten to twelve feet above the floor level; this height gives the fans a good sweeping radius. The small type of fan should be erected as near as possible to the middle of each of the shorter walls of the room, either on a support three feet from the ceiling or three feet above the floor—this will bring the centre of each fan in one case two feet below the ceiling and in the other four feet above the floor level. Although time did not permit of actual experiments being made with the small fans erected four feet above the floor, a consideration of the air-currents produced by these fans shows that, if the fans were used at this level, flies would have great difficulty in entering and moving about in the lower parts of the building. If the flies in the upper parts of the room are efficiently dealt with by other prophylactic measures and due precautions taken to avoid direct draughts this undoubtedly would be the better position for the small fans. For rooms of 500 square feet floor space one large ceiling fan should be hung from the centre of the ceiling about ten feet above the floor. In addition, only one small fan is necessary and should be placed at one corner of the room in such a way that it will sweep the whole area of the room; this can be easily accomplished by a fan swinging through an angle of 90°. The corner chosen for the fan should be one which will allow the fan to play directly on the window or windows during part of its swing; in this way *phlebotomi* will be hampered in their attempt to enter the room. Smaller rooms than the above, such as officers' bedrooms, should be provided with one small desk fan. This can be placed wherever desired. If supported on a table in one corner it can be made to sweep the whole area of the room as described above. The bed can be placed so as to get sufficient air-current without draught.

(vi) As these fans would be provided purely for health reasons, the medical officer of the station could inform the

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commanding officer when it would be necessary for the fans to be put into operation—such conditions as atmospheric temperature humidity and fly incidence guiding him in his decision. It is suggested that, as the switches of the fans might be tampered with, they might be enclosed under a locked cover, preferably a central one for the whole camp. The key of this cover could be in the charge of a N.C.O. responsible to the medical officer for the proper use of the fans. The hours of operation of these fans would vary perhaps daily, in many instances their working would be required only between the hours of sunset and dawn. The initial expense of providing the necessary fans would soon repay itself by the improved health of the personnel.

(vii) The wearing of suitable clothing after sunset aids in preventing many bites from *phlebotomi*. Shorts should not be worn after sundown; when sitting about in slacks it is advisable to fold them in at the ankles and pull the socks over them. Another method would be the wearing of a short ankle puttie as worn with the Norwegian ski-ing costume. The Wellington type of mess boot for officers is a great protection during the evening.

(viii) Bathing should not be indulged in after sundown. Many people are bitten by *phlebotomi* whilst lingering about the shore after an evening bathe.

(ix) It is suggested that the older residents, preferably those who have already had the disease, should sleep in the corner beds; the new-comers occupying the beds towards the centre of the room. This measure is necessary as most of the *phlebotomi* gather in the corners of rooms. A considerable percentage of the early cases of phlebotomus fever in a camp occur amongst men sleeping in the corner beds of huts, and new-comers are less immune to the fever than older residents.

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February, 1925.

REPORT

ON THE

HEALTH OF THE ROYAL AIR FORCE

FOR THE YEAR 1923.

The following Report on the Health of the Royal Air Force for the Year 1923 is issued for the information and guidance of all concerned.

By Command of the Air Council,

W. Nicholson

AIR MINISTRY,
February 1925.

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AIR MINISTRY,
KINGSWAY,
LONDON, W.C. 2.

To The Secretary of the Air Council.

SIR,

I HAVE the honour to submit the accompanying report on the Health of the Royal Air Force during 1923.

Without altering the form of the report, existing tables have been still further abridged and new tables inserted where necessary.

Compared with previous years, the health of the force as indicated by the admission rate (48 hours' cases excluded), death and invaliding rates, and the rate of the number sick daily, shows a progressive improvement.

The percentage of injuries due to flying accidents has remained almost constant during 1921, 1922 and 1923, coincident with a progressive increase in the amount of flying carried out.

The health of the force abroad also shows an improvement. Sandfly fever, malaria and dysentery, in the order as stated, have continued the chief factors in the production of sickness abroad.

The results of the annual medical examination of officers are discussed in Chapter IV., and indicate that the accepted standards of physical efficiency have been satisfactorily maintained.

Research work on the etiology and prevention of sandfly fever—alluded to in previous reports—was continued during the year under review, and the further results are discussed in the report.

Reference is also made in Chapter IV. to the value of aerial transport as a rapid means of evacuation of sick and wounded in Iraq.

I have the honour to be, Sir,
Your obedient Servant,

D. MUNRO,
Director of Medical Services,
Royal Air Force.

December, 1924.

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CHAPTER I.—THE HEALTH OF THE ROYAL AIR FORCE AS A WHOLE.

General.

1. Table I., page 2, shows details of the total sickness in the Royal Air Force during 1923, the table being subdivided to show sickness in each of the various geographical areas. The corresponding figures and ratios for the years 1922 and 1921 have been inserted in italics for the purpose of comparison. The 1920 figures are omitted as they are not comparable with those for the three succeeding years, the present system of medical statistics not having been employed in India during the year 1920 or in many small units scattered through Europe.

2. As in previous reports, sickness of the R.A.F. personnel of the Inter Allied Aeronautical Commission of Guarantee is included in the United Kingdom figures, the average strength of this unit being only 23.

The term "Mediterranean Littoral" includes Malta (average strength 379, which includes R.A.F. personnel of the aircraft carriers in the Mediterranean), Egypt and Palestine (2,777), Constantinople (610) and drafts *en route* to and from areas abroad (346). Figures under the heading "Total Abroad" therefore relate to the total personnel in the Mediterranean Littoral, India and Iraq.

3. Compared with previous years it will be seen that the ratio per 1,000 of strength of fresh cases of sickness in the total force (48-hours cases included) shows a progressive increase. These 48-hours cases, however, have but little influence on the total non-effective rate due to sickness, as appears on reference to the last two columns of the table, where it will be seen that, including 48-hours cases, the number sick daily is 25·8 per 1,000 of strength; excluding them, 23·0. Excluding these minor cases, the ratio of fresh cases of admission has reached the lowest point so far attained. The death rate per 1,000 of strength, the invaliding rate, the average number of days sickness per individual, and the ratio of the number sick daily are also the lowest so far recorded. The average duration of each case in days, including 48-hours cases, shows a reduction; but if 48-hours cases are excluded, a fractional increase is noticed.

4. It is apparent from the table that the increase of fresh cases of sickness is entirely confined to the United Kingdom. Further reference is made to this on page 34.

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TABLE I.—ANALYSIS OF SICKNESS AT HOME AND ABROAD.

Geographical Area.	Average strength.	Fresh cases of sickness.			Deaths.	Invalided out of service.	Invalided to United Kingdom.	Average duration of each case in days.		Average No. of days sickness per head.		Ratios per 1,000 of strength.						
												Fresh cases of sickness		Deaths.	Invalided out of service.	Invalided to United Kingdom.	No. sick daily.	
		Less than 48 hours.	More than 48 hours.	Total.				48-hours cases included.	48-hours cases excluded.	48-hours cases included.	48-hours cases excluded.	48-hours cases included.	48-hours cases excluded.				48-hours cases included.	48-hours cases excluded.
United Kingdom:																		
1923 - -	20,239	12,553	7,171	19,724	54	335	—	7·3	17·9	7·1	6·3	975·1	354·3	2·7	16·5	—	19·5	17·3
1922 - -	*21,074*	*7,905*	*8,060*	*15,965*	*53*	*376*	*2*	*9·9*	*18·2*	*7·5*	*7·0*	*757·6*	*382·5*	*2·5*	*17·8*	*(a)*	*20·6*	*19·1*
1921 - -	*21,936*	*9,862*	*8,418*	*18,280*	*86*	*218*	*4*	*9·8*	*19·8*	*8·2*	*7·6*	*833·3*	*383·8*	*3·9*	*9·9*	*20·5(b)*	*22·4*	*20·8*
Mediterranean Littoral:																		
1923 - -	4,112	2,908	2,444	5,352	22	23	75	9·2	18·4	12·0	10·9	1,301·3	594·4	5·4	5·6	18·2	32·8	30·0
1922 - -	*3,768*	*2,467*	*2,598*	*5,065*	*15*	*24*	*42*	*9·1*	*16·5*	*12·3*	*11·4*	*1,344·3*	*689·5*	*4·0*	*6·4*	*11·1*	*33·6*	*31·2*
1921 - -	*3,306*	*2,262*	*2,101*	*4,363*	*22*	*18*	*59*	*11·2*	*21·8*	*14·8*	*13·9*	*1,319·7*	*635·5*	*6·7*	*5·4*	*17·8*	*40·5*	*38·0*
Iraq:																		
1923 - -	3,524	4,095	3,538	7,633	27	15	120	8·8	17·4	19·1	17·5	2,165·4	1,004·0	7·7	4·3	34·1	52·2	47·9
1922 - -	*2,381*	*4,260*	*3,078*	*7,338*	*34*	*17*	*66*	*7·2*	*15·5*	*22·3*	*20·0*	*3,081·9*	*1,292·7*	*14·3*	*7·1*	*27·7*	*61·2*	*54·8*
1921 - -	*1,282*	*1,688*	*1,413*	*3,101*	*12*	*9*	*50*	*9·1*	*18·6*	*22·0*	*20·4*	*2,418·9*	*1,102·2*	*9·4*	*7·0*	*39·0*	*60·3*	*56·0*
India:																		
1923 - -	1,896	2,876	952	3,828	13	6	40	4·9	15·4	10·0	7·8	2,019·5	502·1	6·9	3·2	21·1	27·4	21·2
1922 - -	*1,703*	*3,256*	*1,133*	*4,389*	*22*	*20*	*52*	*6·2*	*19·4*	*15·9*	*12·9*	*2,577·2*	*665·3*	*12·9*	*11·7*	*30·5*	*43·4*	*35·3*
1921 - -	*1,798*	*3,386*	*2,154*	*5,540*	*14*	*13*	*62*	*7·5*	*17·2*	*23·3*	*20·6*	*3,081·2*	*1,198·2*	*7·8*	*7·6*	*34·5*	*63·8*	*56·4*
Total Abroad:																		
1923 - -	9,532	9,879	6,934	16,813	62	44	235	8·1	17·5	14·2	12·7	1,763·1	727·4	6·5	4·6	24·7(c)	38·9	34·9
1922 - -	*7,852*	*9,983*	*6,809*	*16,792*	*71*	*61*	*160*	*7·6*	*16·5*	*16·1*	*14·3*	*2,138·6*	*867·2*	*9·0*	*7·8*	*20·4(c)*	*44·1*	*39·2*
1921 - -	*6,386*	*7,336*	*5,668*	*13,004*	*48*	*40*	*171*	*9·2*	*19·2*	*18·6*	*17·0*	*2,036·3*	*887·6*	*7·5*	*6·3*	*26·8(c)*	*51·0*	*46·8*
Total Force:																		
1923 - -	29,771	22,432	14,105	36,537	116	379	235	7·7	17·7	9·4	8·4	1,227·3	473·8	3·9	12·7	24·7(c)	25·8	23·0
1922 - -	*28,926*	*17,888*	*14,869*	*32,757*	*124*	*437*	*162*	*8·7*	*17·4*	*9·9*	*9·0*	*1,132·4*	*514·0*	*4·3*	*15·1*	*20·5(c)*	*27·0*	*24·6*
1921 - -	*28,322*	*17,198*	*14,086*	*31,284*	*134*	*258(d)*	*175*	*9·5*	*19·6*	*10·5*	*9·7*	*1,104·6*	*497·3*	*4·7*	*9·1(d)*	*26·6(c)*	*28·9*	*26·7*

(*a*) Ratio not calculated, as average strength of personnel in Rhine Army of Occupation and Inter-Allied Aeronautical Commissions of Control were too small to make any useful comparison.

(*b*) Calculated on strength of R.A.F. personnel in Rhine Army of Occupation and Inter-Allied Aeronautical Commissions of Control.

(*c*) Calculated on strength outside British Isles.

(*d*) Excludes 711 airmen invalided out of service in 1921 by Discharge Centre Medical Board. If these were included the ratio per 1,000 for 1921 would be 34·3.

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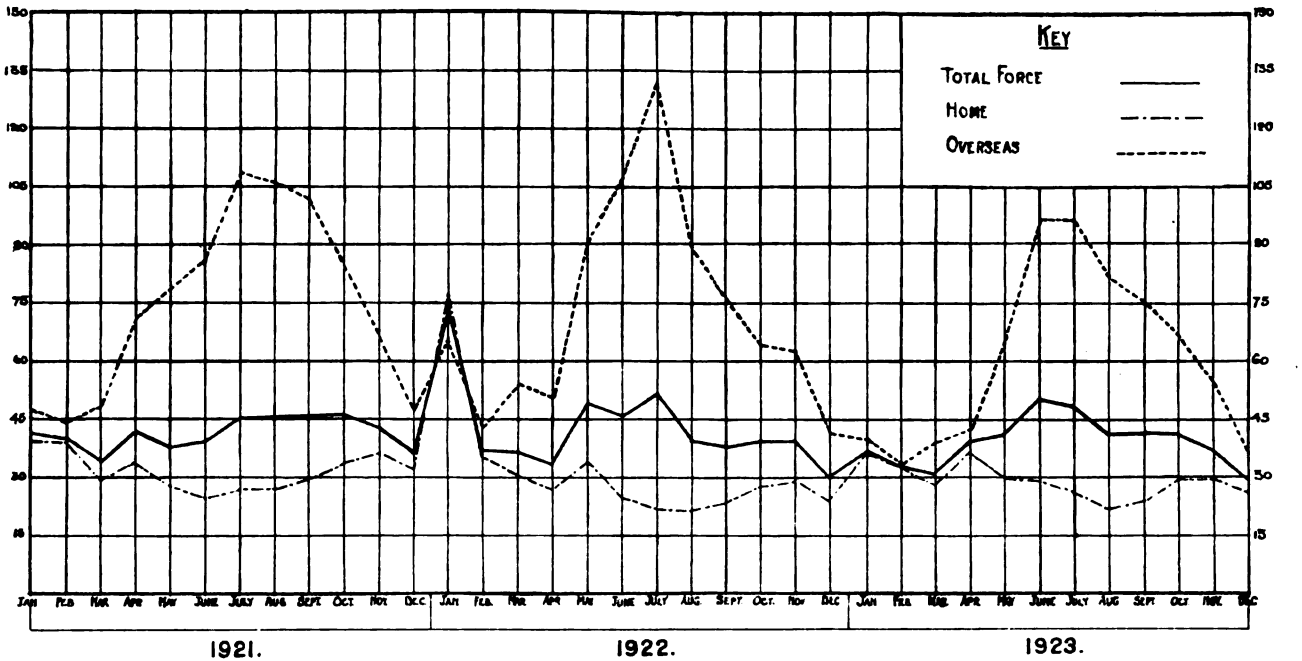
Chart I.– Monthly case incidence of sickness in ratios per 1000 of strength for the United Kingdom, abroad and for the total force in 1921, 1922 and 1923.
(Cases of 48 hours duration are excluded.)



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5. Chart I., facing page 2, shows the monthly case incidence of sickness in ratios per 1,000 of strength for the United Kingdom, abroad and for the total force during the years 1923, 1922 and 1921. Cases of 48 hours duration or less have not been included in the chart.

6. An analysis of deaths and invalids from the service during 1921, 1922 and 1923 is given in Table VI., page 13. This table shows the number of cases of sickness, deaths and invalids resulting from the main disease groups during each of the three years. The percentage of the total due to each disease group is also given. It should be borne in mind that the invaliding figures shown for 1921 include 711 airmen who were discharged from the service through the agency of the Discharge Centre Medical Board, and were not included in the nosological tables for that year, although accounted for elsewhere in the report. Points of interest in the table are

(i) the progressive reduction in the total deaths and invalids during the three years, more marked when the increase of strength is taken into consideration;

(ii) the large number invalided in 1921 compared with succeeding years, representing the aftermath of the Great War, which is also reflected in the steady and progressive reduction in the percentage invalided on account of injuries;

(iii) the increasing percentage of the total invalided for tuberculosis, which in 1923 ranked an equal second as a cause of invaliding. The incidence of this disease is being made the subject of a special analysis for investigation.

7. Table IX., page 18. This nosological table shows sickness incidence, deaths, invalids from the service, average number sick daily and average duration of each case for the United Kingdom, abroad and for the total force. A departure has been made from the procedure of previous reports of showing the ratio per 1,000 of strength of deaths and invalids. It has been considered preferable to show the actual number of deaths and invalids, but to retain the case incidence rate. Further, the strength of each area has been inserted at the top of the appropriate columns; the death and invaliding rate can thus be calculated if it is desired to do so.

8. Tables X., page 32, deals in greater detail with certain diseases starred in Table IX., the table being arranged to show the case, death and invaliding rates, average number sick daily and average duration of each case, in each of the various geographical areas.

9. Venereal disease, upper air passage infections and pulmonary tuberculosis, diseases which affect the force as a whole, are dealt with in the present chapter. Diseases peculiar to tropical climates are dealt with in Chapter III.

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Table II.—The Frequency of Attack of certain Diseases.

Frequency of attack.	Sickness abroad.			Sickness at home or abroad.	
	Dysentery	Malaria.	Sandfly.	Upper Air Passage Infections.	Venereal diseases.*
Individuals:—					
Sick once	172	613	1,145	1,549	531
Sick twice	10	119	149	91	89
Sick three times	3	38	15	9	6
Sick four times	1	10	—	—	2
Sick five times	—	4	—	—	—
Sick six times	—	—	—	—	1
Total number of individuals sick	186	784	1,309	1,649	629
Total number of cases	205	1,025	1,488	1,758	741
Number of cases arising from each 100 individuals attacked:—					
1923	110	131	114	107	118
1922	*107*	*122*	*120*	*108*	*116*
1921	*113*	*126*	*110*	*107*	*118*
Case incidence rate per 1,000 of strength:—					
1923	21·5	107·5	156·1	59·1	24·9
1922	*22·4*	*73·6*	*230·6*	*73·9*	*25·5*
1921	*38·5*	*122·9*	*122·9*	*64·0*	*32·9*

* Excludes cases of congenital syphilis and of re-admissions for further treatment of syphilis.

10.—(i) The frequency of attack in certain diseases, which either affect the force as a whole, or are the chief causes of non-effectiveness, is shown in Table II. The case incidence rate and the number of cases arising from each 100 individuals attacked (recurrent rate) are given for each disease during 1923, 1922 and 1921. From the table it will be seen that the case rate for dysentery shows a progressive reduction during the three years, whilst the recurrent rate remains fairly constant. Analysis of further figures available suggests that the reduction in case incidence is due to a decrease in the primary, and to a less extent in the recurrent, rates.

(ii) As regards malaria, the case incidence was highest in 1921, a pronounced drop occurring in 1922, followed by a smalle

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increase during 1923. The recurrent rate during the three years shows slight fluctuation. A further analysis of the figures shows that an increase or decrease in the total case rate is caused by an increase or decrease in either primary or recurrent rates, but is not due to either alone.

(iii) The figures for sandfly fever show that the total case incidence was highest in 1922, lower in 1923 and lowest in 1921. Analysis suggests that an increase in the total case rate is brought about not only by an increase in the number of individuals attacked once only but also, though to a much less extent, by an increase in the number attacked more than once.

(iv) Corresponding figures for upper air passage infections show that the recurrent rate is practically unchanged from year to year and that the ratio of individuals attacked more than once remains almost constant. From this it appears that an increase in the total case incidence is caused by an increase in the number of individuals attacked. It will be seen that the incidence of venereal disease shows a progressive reduction, whilst the recurrent rate remains unchanged. The number of individuals per 1,000 of strength having more than one attack also remains unchanged during the same period. The inference from the above is that the decrease is due to a decrease in both primary and relapse rates, suggestive of increasing improvement in treatment.

Venereal Disease.

11. A further reduction in the case incidence of these diseases has been effected during 1923. The case incidence per 1,000 of strength of the total force for all types of venereal disease was 26·2 as compared with 27·2 in 1922. The average duration of each case shows a fractional reduction from 51·2 days in 1922 to 50·1 days in 1923. The primary rate, *i.e.*, cases reporting for treatment for the first time after infection and excluding relapses and readmissions for further treatment of syphilis, was 19·3 per 1,000 of strength compared with 19·2 in 1922. As the primary rate has remained constant during the two years, it follows that the reduction in the total rate must be due to a decrease in the re-admission rate. This, in conjunction with the slight reduction in the average duration of each case, is suggestive of improvement in the methods of treatment. The measures, educational, prophylactic, recreational and disciplinary, which have been fully described in previous reports were continued and intensified. Units stationed in the vicinity of large towns and holiday resorts record the highest incidence, and those situated near the latter are especially influenced by the holiday seasons. During the year special attention was directed to intensifying anti-venereal propaganda among units so situated.

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Upper Air Passage Infections.

12. The case incidence of this group of diseases shows a reduction compared with previous years. The rate for 1923, 59·1 per 1,000 of strength, being the lowest so far reached. The corresponding rates for 1921 and 1922 were 64·0 and 73·9 respectively. The average duration of each case was 8·0 days in both 1922 and 1923, compared with 8·3 days during 1921. The reduction shown by the figures for 1923 was general throughout the force, each area showing a decrease compared with 1922. In the United Kingdom the reduction amounted to 8·5 per 1,000 of strength, Mediterranean Littoral 42·7, Iraq 20·8 and India 24·7. The Mediterranean Littoral returned the highest rate of all areas in each of the three years. Chart II., facing page 6, shows the monthly case incidence in ratios per 1,000 of strength for the United Kingdom, abroad and for the total force in 1921, 1922 and 1923. Points of interest in the chart are the peaks in the United Kingdom graph which occur in the winter months of each year and the reduction in case incidence abroad during 1923. Table III., page 6, shows the monthly case incidence in each geographical area abroad during the past three years. Further detailed figures of this group of diseases are given in the nosological Tables IX. and X., pages 18 and 32.

TABLE III.—MONTHLY CASE INCIDENCE OF UPPER AIR PASSAGE INFECTIONS IN RATIOS PER 1,000 OF STRENGTH FOR AREAS ABROAD IN 1923, 1922, 1921.

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept	Oct.	Nov.	Dec.
Mediterranean Littoral :—												
1923 -	8·1	6·2	8·7	6·1	7·6	3·2	5·6	6·0	5·7	3·5	7·0	6·8
1922 -	*13·8*	*10·3*	*9·6*	*14·1*	*8·5*	*6·2*	*9·0*	*11·0*	*10·0*	*5·5*	*12·9*	*8·4*
1921 -	*8·9*	*8·5*	*8·4*	*7·1*	*12·1*	*11·1*	*8·7*	*8·5*	*5·7*	*9·8*	*8·0*	*13·2*
Iraq :—												
1923 -	5·7	8·3	4·0	3·2	4·8	5·1	6·3	6·0	5·5	6·4	4·4	1·6
1922 -	*5·9*	*7·2*	*10·0*	*7·1*	*9·0*	*1·7*	*2·0*	*3·2*	*8·7*	*6·6*	*12·0*	*7·9*
1921 -	*5·2*	*3·5*	*8·0*	*8·7*	*7·3*	*3·8*	*5·4*	*7·0*	*8·5*	*16·5*	*8·4*	*6·6*
India :—												
1923 -	—	2·9	3·8	2·5	0·5	1·5	2·6	1·5	2·1	2·6	4·6	1·5
1922 -	*16·7*	*7·3*	*5·5*	*2·3*	*4·5*	*2·9*	*3·4*	*1·2*	*0·6*	*2·3*	*2·4*	*2·4*
1921 -	*4·6*	*5·2*	*6·7*	*7·5*	*8·8*	*5·7*	*5·2*	*5·9*	*2·9*	*3·5*	*3·3*	*2·1*

Pulmonary Tuberculosis.

13. There were 53 cases of pulmonary tuberculosis, resulting in 2 deaths and 46 invalids from the Service, as compared with 48 cases, 2 deaths and 45 invalids, during 1922. Of the 53 cases, 33 were reported at home and 20 from abroad.

These cases can be classified as follows :—

(i) By locality;—Nine cases were reported from Uxbridge, 6 from Henlow, 4 from Cranwell and 3 from Halton.

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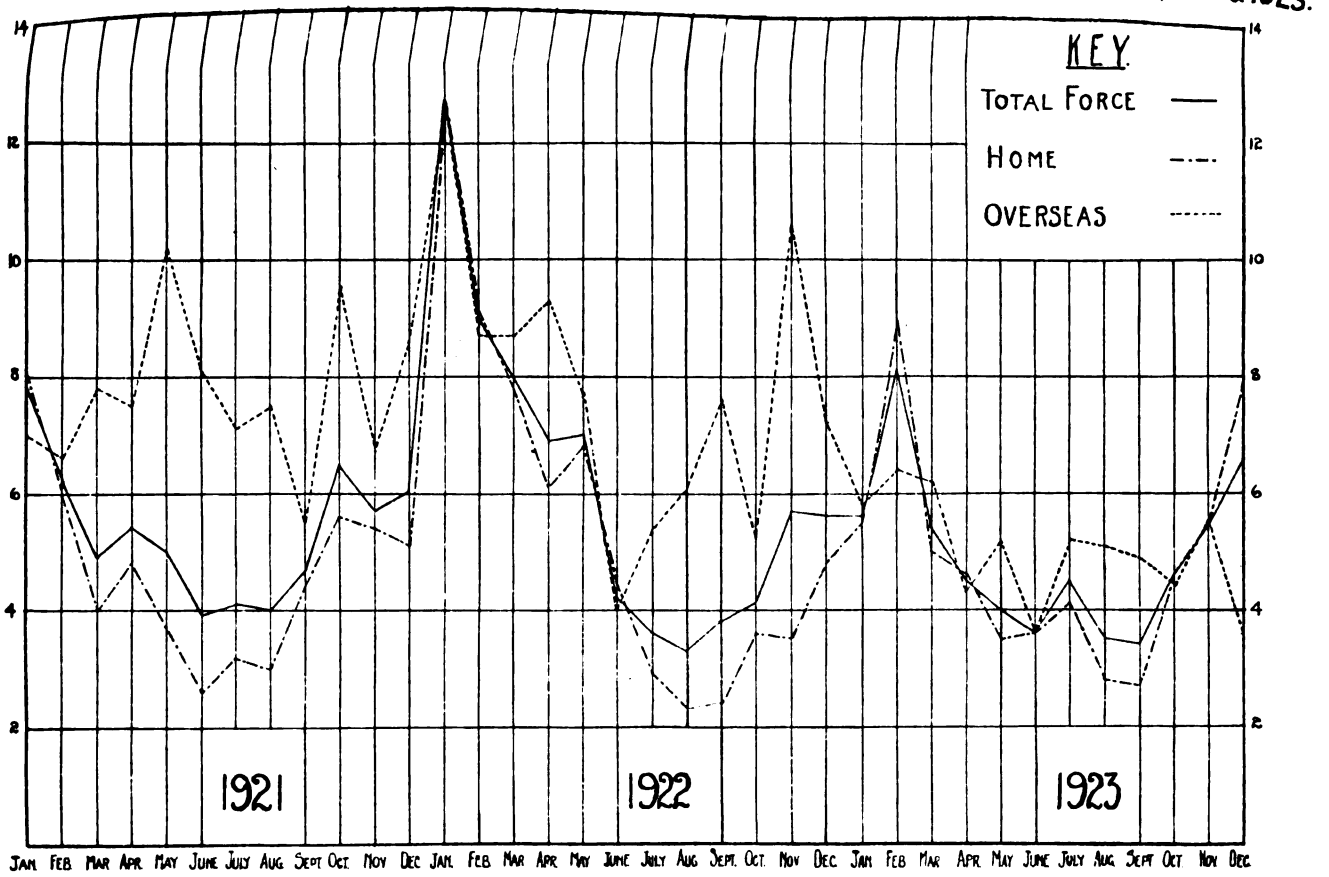
Chart II.– Monthly case incidence of upper air passage infections in ratios per 1000 of strength for the United Kingdom, abroad and total force in 1921, 1922 & 1923.



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The remaining cases at home were scattered amongst other stations. Abroad, cases occurred in Egypt 6, Iraq 4. Malta 3, Palestine, India and drafts *en route* 2 each, Constantinople 1.

(ii) By trade groups;—Thirteen cases occurred amongst aircrafthands, 9 amongst fitters and 4 amongst wireless operators. The remainder were scattered fairly uniformly amongst the remaining trade groups.

(iii) By age;—Age 22, 10 cases; age 20, 9 cases; age 23, 7 cases; age 21, 6 cases.

(iv) By length of service;—Ten cases occurred amongst personnel with 2 years' service, 10 with 3 years' service, 10 with 4 years' servics, 7 with 5 years' service and 5 with under 12 months' service.

(v) By family history;—In 11 cases a family history of tuberculosis was elicited, in 18 cases there was no history and in the remainder details of family history were not stated.

Cause of Injury.

14. Table IV, page 8, gives an analysis of all injuries which occurred during 1923. The table is subdivided to show the nature and cause of the accident, in addition to whether it was regarded as occurring on duty as opposed to off duty. As in previous reports, all injuries due to athletics, whether organised (on duty) or unorganised (off duty), are grouped together under the heading of athletics. From the table it will be seen that injuries caused by athletics are chiefly confined to the lower extremity; but if all injuries due to this cause are excluded, it appears that the lower limb alone was involved in 37·5 per cent. of the remaining accidents, the percentage being 35·8 per cent. in 1922 and 34·5 per cent. in 1921. From the figures available during the three years, it appears that in nearly 50 per cent. of all injuries the lower limb alone is involved. It will be noticed that injuries due to flying accounted for 6·3 per cent. of the total cases of injury during 1923, 6·1 per cent. in 1922 and 6·4 per cent. in 1921, an almost constant figure during the three years. Apart from injury, 346 cases of disease, the result of previous injury, occurred in 1923, compared with 411 in 1922 and 408 in 1921. As in previous years, the commonest forms of disease were septic conditions, viz., cellulitis, 94 cases; abscess, 40; recurrent synovitis of the knee joint, 82.

15. *Flying Accidents.*—Table V, page 9, gives an analysis of casualties due to flying during the years 1923, 1922 and 1921. The average strength of cadets during each of the three years has been under 100 and, in view of this relatively small number compared with the strength of officers or airmen, the ratios for cadets have not been calculated. From the table it will be seen that there were 112 cases of injury, resulting in 46 deaths

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Table IV.—Cases of Injury classified by Type of Injury and Cause.

Injury.	Cause of injuries regarded as occurring on duty.					Cause of other injuries.				Total, all causes.	Percentage of all cases of injury.
	Flying.	Airscrew.	Motor car, cycle and lorry.	Other causes	Total.	Athletics.	All cases on leave.	Not stated.	Other causes		
General injuries	52	—	2	22	76	10	5	—	50	141	7·8
Local Injuries:											
Head and face	37	9	20	71	137	38	3	1	102	281	15·7
Trunk - -	3	2	4	23	32	36	4	2	24	98	5·5
Upper extremity - -	2	16	50	133	201	85	12	—	74	372	20·7
Lower extremity - -	18	11	20	164	213	469	36	11	173	902	50·3
Total -	112	38	96	413	659	638	60	14	423	1794	100
Percentage of total cases:											
1923 - -	6·3	2·1	5·4	23·0	36·8	35·6	3·2	0·8	23·6	—	—
1922 - -	*6·1*	*1·4*	*5·6*	*22·4*	*35·5*	*36·4*	*2·2*	*1·1*	*24·8*	—	—
1921 - -	*6·4*	*2·0*	*9·0*	*23·4*	*40·8*	*34·4*	*1·7*	*1·9*	*21·2*	—	—
Deaths:											
1923 - -	46	1	1	8	56	7	2	—	12	77	4·3
1922 - -	*50*	*1*	—	*10*	*61*	*1*	*1*	—	*10*	*73*	*4·3*
1921 - -	*60*	*2*	*1*	*7*	*70*	*4*	*2*	*1*	*10*	*87*	*4·9*

during 1923, compared with 102 cases resulting in 50 deaths in 1922 and 86 cases with 36 deaths in 1921. It should be borne in mind that there has been a very considerable progressive increase in the number of hours flown throughout the three years. The casualties caused by the explosion of the airship R. 38, 27 cases with 24 resultant deaths, have been omitted from the 1921 figures. No airship flying has taken place since that year and consequently the omission is necessary in order that the figures for the three years may be comparable. The case rate per 1,000 of strength among officers was 24·3 in 1923, 26·2 in 1922 and 21·7 in 1921. The death rates were 11·0, 11·9, and 8·6 respectively. Amongst airmen, the cases and deaths were distributed among trade groups as follows:—Fitters 12 cases resulting in 3 deaths, riggers and carpenters 10 with 4 deaths, aircrafthands 4 with 3 deaths, wireless operators 4 with no deaths and one airman pupil pilot who was killed. The remaining 7 cases, resulting in 2 deaths, were spread fairly uniformly among the remaining trade groups. The average duration of each case, excluding deaths, was 50·6 days compared with 48·5 days in 1922 and 65·2 days in 1921. Including deaths, the average duration was respectively 29·8 days, 24·7 days and 36·7 days. Only one fatal accident to a cadet has occurred during the three years.

16. *Airscrew Accidents.*—Thirty-eight cases were reported during 1923, compared with 23 in 1922 and 35 in 1921. Of the

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TABLE V.—CASUALTIES DUE TO FLYING ACCIDENTS ON DUTY.

Rank.	1923.			1922.			1921.		
	Home.	Abroad.	Total.	Home.	Abroad.	Total.	Home.	Abroad.	Total.
Officers.									
Killed	19	14	33	17	17	34	12	12	24
Injured	28	12	40	26	15	41	21	16	37
Cadets.									
Killed	—	—	—	1	—	1	—	—	—
Injured	1	—	1	2	—	2	1	—	1
Airmen.									
Killed	5	8	13	5	10	15	9	3	12
Injured	16	9	25	3	6	9	8	4	12
Total killed	24	22	46	23	27	50	21	15	36
„ injured	45	21	66	31	21	52	30	20	50
Total cases	69	43	112	54	48	102	51	35	86
Percentage of deaths to total casualties	41			49			42		
Average duration per case:									
Deaths included	29·8 days.			24·7 days.			36·7 days.		
Deaths excluded	50·6 days.			48·5 days.			65·2 days.		
Case rates per 1,000 of strength:									
Officers.									
Deaths only	11·0			11·9			8·6		
Injuries only	13·3			14·3			13·1		
Total	24·3			26·2			21·7		
Airmen.									
Deaths only	0·5			0·6			0·5		
Injuries only	0·9			0·3			0·5		
Total	1·4			0·9			1·0		

38 cases in 1923, 34 occurred during the act of swinging the airscrew, the individual being struck by the blades in 31 instances, and sustaining a sprain in the 3 additional cases. The 4 remaining cases occurred among personnel not actually engaged in swinging the airscrew. The single death reported was due to a fractured skull. The airman concerned was removing a trestle from under a float of a seaplane and on standing up was struck by the revolving blades of the airscrew. The average duration of each case in the former group was 49·1 days, and 22·4 days in the latter. One case was invalided from the service. The 38 cases were distributed among the different trade groups as follows:— Fitters, 19; riggers and carpenters, 11; aircraft hands, 3; and

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single cases among 5 other trade groups. Although mechanical devices are extensively employed for starting aircraft engines, it is essential that experience should be gained in the starting of engines by hand. Machines may be compelled to land in out-of-the-way places where mechanical methods are not available; also, in the event of a breakdown of mechanical devices, resort has to be made to hand-starting by swinging the airscrew.

17. *Accidents whilst starting other engines.*—This type of accident accounted for 46 cases during 1923, compared with 48 in 1922 and 71 in 1921. There were no deaths. The average duration of each case during the three years was 26·1 days in 1923, 25·7 days in 1922, and 30·2 days in 1921. As in previous years, the commonest type of injury was a Colles' fracture, 16 cases; other fractures of the bones of the forearm accounted for a further 12 cases. In two cases, injury was caused to the face through its being struck by the starting handle. The lower limb was injured in 3 instances. There was but little difference in the seasonal incidence; 25 cases were reported during the winter months compared with 21 in the period April to September. The majority of cases occurred among the driver group (30), aircraft hands (6) and officers (4), the remaining cases being distributed fairly uniformly among the remaining trade groups. The progressive reduction in the case incidence is considered satisfactory.

18. *Accidents with motor vehicles other than in starting engines.*—There were 199 cases of injury resulting in 5 deaths during 1923, the figure being 122 with one death in 1922 and 150 with one death in 1921. One case was invalided from the service during each of the three years. The average duration of each case was 22·1 days, compared with 29·8 in 1922 and 25·8 in 1921. Accidents on motor cycles again accounted for the majority, 134 cases or 67·4 per cent. of the total being due to this cause. Of the 134 cases, 19 were reported to have occurred on duty and 114 off duty. Details as to whether on or off duty were lacking in one case. The remaining 65 cases can be classified as follows :—injuries to occupants of motor cars, 24; to occupants of lorries and tenders, 18; injuries by R.A.F. transport when not occupant, 6; civilian transport, 11; details of ownership unknown, 4. Collisions accounted for the 2 remaining cases.

19. *Wounds in action.*—The single case reported occurred during aerial patrol on the Indian frontier. An observer was slightly wounded by a sniper.

20. *Accidental gunshot wounds.*—There were 11 cases with no deaths, compared with 13 cases resulting in 2 deaths in 192· and 15 cases with 2 deaths in 1921. One case was invalided from the service for injuries sustained prior to 1923. The average duration of each case was 92·4 days as compared with 60·6

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days in 1922 and 43·6 days in 1921. Of the 11 cases, 8 were due to gunshot wounds, 2 to detonator explosions, and one to the explosion of a practice bomb.

21. *Other injuries on duty.*—Three hundred and eighty-four cases occurred, compared with 317 in 1922 and 355 in 1921. Eight deaths resulted in 1923, 4 in 1922, and 3 in 1921. Three cases were invalided from the service. The average duration of each case was 17·6 days, compared with 16·6 in 1922 and 19·9 in 1921. Five of the 8 deaths were caused by drowning, owing to the capsizing of the river gunboat " Blackfly " in Iraq.

22. *Injuries due to athletics.*—There were 638 cases resulting in 7 deaths, compared with 611 with one death in 1922 and 610 with 4 deaths in 1921. One case was invalided from the service during each of the years 1923 and 1922. The case incidence per 1,000 of strength was practically the same during the three years, being 21·4 in 1923, 21·1 in 1922 and 21·5 in 1921. Of the 7 deaths, 4 were due to bathing, 1 to football, 1 to polo, and 1 occurred during a gymkhana. The last was caused by a horse throwing its rider and crushing him in its subsequent fall. Football accounted for 69 per cent. of the total injuries caused by athletics. The percentage was 74 in 1922 and 71 in 1921—a fairly constant percentage. The commonest injuries due to football were synovitis of the knee joint, 126 cases; sprained ankle, 74; contusions, 48; sprained knees, with or without involvement of the semi-lunar cartilage, 44; and fractured clavicle, 11.

23. *Other injuries off duty.*—These amounted to 239 cases during 1923, compared with 316 in 1922 and 311 in 1921. There were no deaths. During 1922, 3 deaths were reported, compared with 8 during 1921. The average duration of each case during the three years was 17·5 days in 1923, 16·6 in 1922 and 17·7 in 1921.

24. *Injuries occurring on leave.*—Sixty cases, resulting in 2 deaths, were reported in 1923, 35 cases with 1 death in 1922, and 30 with 2 deaths in 1921. The average duration of each case shows a progressive decrease from 37·9 days in 1921 to 21·2 in 1922 and 17·2 in 1923. One death was caused through a collision between a cycle and a tram, the other being a case of suicide (*vide* para. 26, sub-para. (ii)).

25. *Injuries caused by animals.*—Sixteen cases were reported, with an average duration of 18·1 days, compared with 20 cases with an average duration of 18·7 days in 1922. Thirteen cases were reported during 1921, the average duration of each case being 17·2 days. Thirteen cases of dog bite occurred, mostly in Iraq and India. Twelve of the cases received anti-rabic treatment, which was also given in a case of jackal bite. The remaining 2 cases were due to scorpion stings.

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26. *Other injuries :—*

(i) Homicide, personal conflicts, &c., accounted for 25 cases, the average duration of each case being 19·2 days. There was 1 death, that of an officer murdered by Arabs in Iraq.

(ii) Nine cases of attempted suicide were recorded. Death resulted in 8 cases. One case occurred on leave (*vide* para. 24). Self-inflicted wounds accounted for a further 3 cases.

(iii) Injuries of unknown cause amounted to 13 cases. It is satisfactory to note that the number of cases of unknown cause is steadily decreasing, pointing to an improvement of medical records. The average duration of each case was 10·6 days.

Disease and Injury among different Types of Unit.

27. Table VII, page 14, shows sickness, sub-divided into disease and injury, among different unit types at home and abroad. The table further shows case, death and invalid rates, average duration of each case and the number sick daily, as a ratio per 1,000 of strength. Compared with previous reports the table has been still further condensed and three main subdivisions of unit types are now shown, namely :—

(i) Units where the duties involve either flying or machinery risks.

(ii) Where machine risk alone is involved.

(iii) Where neither of the above risks is incurred.

The force as a whole gives a proportion of disease to injury of 6·6 to 1, the figure for the home force being 5·1 to 1 and for the force abroad 9·3 to 1. The corresponding figures in 1922 were respectively 6·8, 6·5 and 7·3. The higher injury rates in the force abroad, compared with those at home, is again noticeable, although not so marked as in previous years. At home, headquarters and miscellaneous units, &c., show the greatest proportion of disease to injury at 10·6 to 1, flying units the least at 2·8 to 1. In the force abroad repair depôts, &c., show the highest proportion at 12·3 to 1, flying units the least at 6·9 to 1. At home the highest injury rate is found in repair depôts, &c., abroad in flying units. The high sickness rate shown in stores and repair units at home compared with other home units, may be partly attributed to the inclusion in this group of boys under training.

Disease and Injury amongst the different Trade Groups.

28.—(1) Table VIII, page 16, gives an analysis of disease and injury in each of the individual trade groups. The table shows for each trade group the case rate for certain diseases

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Table VI.—Deaths and Invalids classified by Cause.

Disease Group.	Cases.			Deaths.			Invalids.			Percentage of Total Invalids.		
	1921.	*1922.*	1923.	*1921.*	*1922.*	1923.	*1921.*	*1922.*	1923.	*1921.*	*1922.*	1923.
Dysentery	*268*	*184*	212	*1*	*1*	–	*8*	*2*	–	*0·8*	*0·5*	–
Enteric	*33*	*26*	34	*2*	*1*	3	–	–	–	–	–	–
Influenza	*639*	*1,160*	390	*2*	–	1	–	–	–	–	–	–
Malaria	*866*	*648*	1,084	*1*	*1*	1	*10*	–	2	*1·0*	–	0·5
Pneumonia	*45*	*52*	65	*5*	3	6	–	–	–	–	–	–
Pyrexia of unknown origin	*183*	*94*	94	–	*1*	–	–	–	–	–	–	–
Tuberculosis	*48*	*71*	64	*4*	*5*	3	*41*	*54*	53	*4·2*	*12·4*	14·0
Venereal	*1,023*	*788*	781	–	–	–	*12*	*2*	7	*1·2*	*0·5*	1·8
Other communicable diseases	*167*	*190*	201	*2*	*4*	2	*6*	*2*	1	*0·6*	*0·5*	0·3
Carriers	*20*	–	5	–	–	–	–	–	1	–	–	0·3
Pyæmia and septicæmia	*2*	*7*	6	*2*	*6*	4	–	–	–	–	–	–
Other common diseases due to infection	*861*	*832*	953	–	–	–	*4*	*2*	2	*0·4*	*0·5*	0·5
Nervous system and brain	*285*	*287*	338	*3*	*1*	2	*151*	*102*	90	*15·6*	*23·3*	23·7
Eye	*152*	*180*	179	–	–	–	*74*	*37*	33	*7·7*	*8·5*	8·7
Ear and nose	*266*	*252*	254	–	–	–	*116*	*51*	44	*12·0*	*11·7*	11·6
Circulatory system	*214*	*230*	158	*5*	*3*	3	*136*	*46*	32	*14·0*	*10·5*	8·4
Lymphatic system	*4*	*15*	5	*1*	–	–	*3*	*7*	3	*0·3*	*1·6*	0·8
Respiratory system	*449*	*367*	397	*4*	*5*	4	*35*	*11*	12	*3·6*	*2·5*	3·2
Teeth and gums	*114*	*84*	95	–	–	–	*19*	*2*	–	*2·0*	*0·5*	–
Digestive system	*1,036*	*1,043*	1,098	*6*	*8*	4	*18*	*20*	16	*1·9*	*4·6*	4·2
Disorders of nutrition or metabolism	*25*	*5*	2	–	–	–	*1*	*3*	–	*0·1*	*0·7*	–
Generative system	*201*	*220*	238	–	–	–	*9*	–	1	*0·9*	–	0·3
Organs of locomotion	*348*	*411*	399	–	–	–	*135*	*54*	53	*13·9*	*12·4*	14·0
Areolar tissue and skin	*425*	*329*	414	–	–	–	*13*	*5*	8	*1·3*	*1·1*	2·1
Urinary organs	*84*	*59*	88	*1*	–	2	*27*	*13*	10	*2·8*	*3·0*	2·7
Tumours and cysts.	*57*	*76*	78	*1*	*2*	1	–	*4*	2	–	*0·9*	0·5
Poisons	*15*	*67*	64	*1*	*1*	2	–	–	1	–	–	0·3
Debility	*125*	*82*	77	–	–	–	*14*	*2*	1	*1·4*	*0·5*	0·3
Other diseases	*3*	*1*	–	–	–	–	*23*	*1*	–	*2·4*	*0·2*	–
Total above diseases	*7,858*	*7,760*	7,773	*41*	*42*	38	*855*	*420*	372	*88·2*	*96·1*	98·2
Total all injuries	*1,924*	*1,895*	1,853	*93*	*82*	78	*114*	*17*	7	*11·8*	*3·9*	1·8
Total above diseases and injuries	*9,782*	*9,655*	9,626	*134*	*124*	116	*969*	*437*	379	*100·0*	*100·0*	100·0

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Table VII.—Disease and Injury amongst different Types of Unit.

Type of Unit.		Home. Ratios per 1,000 of average strength. Cases.	Deaths.	Invalided out of service.	No. sick daily.	Average duration of case.	Abroad. Ratios per 1,000 of average strength. Cases.	Deaths.	Invalided out of service.	No. sick daily.	Average duration of case.	Total. Ratios per 1,000 of average strength. Cases.	Deaths.	Invalided out of service.	No. sick daily.	Average duration of case.
						Days.					Days.					Days.
Flying units	Disease	138·9	0·3	6·3	7·8	20·5	579·7	1·7	5·6	26·1	16·4	257·8	0·7	6·1	12·7	18·0
	Injury	48·2	2·8	0·4	2·7	20·5	84·0	6·8	—	4·6	20·2	57·8	3·9	0·3	3·2	20·4
	Total	187·1	3·1	6·8	10·5	20·5	663·7	8·6	5·6	30·7	16·9	315·7	4·6	6·5	16·0	18·5
Stores and repair depôts and ground schools.	Disease	1,415·9	3·6	63·0	63·7	16·4	732·9	2·0	3·9	34·7	17·3	997·2	2·6	26·8	45·9	16·8
	Injury	234·6	2·2	0·9	11·3	17·6	59·8	2·2	—	3·2	19·8	127·4	2·2	0·3	6·4	18·2
	Total	1,650·5	5·8	63·9	75·1	16·6	792·7	4·2	3·9	37·9	17·5	1,124·6	4·8	27·1	52·3	17·0
Headquarters, personnel depôts and miscellaneous small units.	Disease	185·4	0·9	16·8	8·8	17·2	681·1	3·7	3·7	35·4	19·0	291·9	1·5	14·0	14·5	18·1
	Injury	17·4	0·1	—	0·9	18·0	61·6	2·6	—	2·9	17·3	26·9	0·7	—	1·3	17·7
	Total	202·8	1·0	16·8	9·6	17·3	742·6	6·3	3·7	38·4	18·8	318·8	2·2	14·0	15·8	18·1
Total	Disease	296·0	0·8	16·2	14·3	17·7	656·8	2·2	4·6	31·1	17·3	411·5	1·3	12·5	19·7	17·5
	Injury	58·3	1·8	0·3	3·0	19·0	70·6	4·3	—	3·8	19·5	62·2	2·6	0·2	3·3	19·2
	Total	354·3	2·7	16·5	17·3	17·9	727·4	6·5	4·6	34·9	17·5	473·8	3·9	12·7	23·0	17·7

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which affect the force as a whole, the injury rate and the corresponding disease and injury rates for the total force. As regards injuries, it should be borne in mind that athletics are common to all trade groups and that during 1923, 35·6 per cent. of all injuries were due to athletics.

The nine trade groups shown are composed as follows :—

(1) Aircrafthands, including

Batmen.	Police.

(2) Boys, including boys under technical training.

(3) Carpenters and riggers, including

Motor body builders.	Propeller makers.

(4) Clerks, including

Draughtsmen.	Chemists.
Meteorologists.	Photographers.
	Wireless Operators.

(5) Drivers, including

Petrol, steam and motor boat drivers.	Motor boat crew other than drivers and fitters.
Motor cyclists.	Armoured car crew.

(6) Fitters, including

Greasers.	Winch drivers and fitters.
Millwrights.	

(7) Metal workers, including

Acetylene welders.	Armourers and assistants.
Blacksmiths.	Moulders.
Coppersmiths and mates.	Pattern makers.
Instrument makers and repairers.	Sheet metal workers.
	Tinsmiths.
Machinists.	Turners.
Wireless mechanics.	Dental mechanics.

(8) Officers, including

Cadets.	Airmen pilots.
Aerial gunners.	

(9) Other skilled trades, including

Butchers.	Cooks.
Coach painters.	Drill instructors.
Compass setters.	Fabric workers.
Dynamo switchboard attendants.	Hydrogen workers.
	Pharmacists.
Electricians.	Instructors.
Hospital orderlies.	Power station engineers.
Musicians.	Shoemakers.
Painters and mates.	Storekeepers and storemen.
Shift engineers.	Tailors.
Upholsterers.	Vulcanisers.

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The underlying principle in the formation of these groups has been

(i) To include, as far as possible, in the same group, all occupations exposed to more or less similar conditions.

(ii) To avoid any divergence in the strength of the various groups that would vitiate the value of comparisons.

TABLE VIII.—NOSOLOGICAL TABLE CLASSIFIED BY TRADES, SHOWING NUMBER OF CASES PER 1,000 OF STRENGTH IN EACH BRANCH OR TRADE AND FOR THE TOTAL FORCE IN 1923.

TRADE GROUP.	Disease.								
	Upper air passage infections.	Impetigo.	Scabies.	Venereal disease.	Digestive system.	Other diseases.	Total diseases.	Total injuries.	Total diseases and injuries
(1) Aircraft hands -	55·8	9·7	6·7	23·0	32·7	200·8	328·6	45·6	374·2
(2) Boys - - -	131·8	75·1	6·3	1·0	43·1	267·9	525·2	66·9	592·1
(3) Carpenters and riggers - - -	45·8	10·6	7·6	20·1	38·6	264·2	386·8	74·6	461·4
(4) Clerks - -	51·8	6·3	7·3	18·3	42·2	303·2	429·1	47·2	476·2
(5) Drivers - -	56·1	6·8	7·2	34·4	47·7	410·5	562·7	77·7	640·4
(6) Fitters - -	60·5	12·6	4·6	21·2	31·7	315·9	446·6	84·0	530·6
(7) Metal workers -	47·1	5·1	3·4	21·5	29·5	314·1	420·6	58·4	479·0
(8) Officers, cadets, airmen pilots -	41·1	5·1	2·2	1·3	30·2	253·9	333·9	88·7	422·6
(9) Other skilled trades - - -	63·3	7·0	6·1	24·2	44·2	331·4	476·2	50·9	527·1
Total force -	59·1	13·0	5·9	19·3	36·9	277·4	411·5	62·2	473·8

29. Points of interest in the table are

(i) the highest sickness incidence occurred in the driver group, which shows the highest disease rate accompanied by a high injury rate. It is difficult to explain why this trade group records a disease rate considerably in excess of any of the remaining groups. Comparison with the corresponding figures in future years may possibly afford additional information;

(ii) the sickness rate for boys occupies a relatively high position in the table. This would be expected, as admission to the sick list on account of trivial ailments is more common amongst boys than amongst men. This is reflected in the figures for impetigo and upper air passage infections, where boys easily record the highest incidence;

(iii) the high injury rate amongst the Officer group. It must not be assumed that this is due to flying *per se*, as many other risk factors are entailed which are common to

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all trade groups. Injuries in flying accidents account for approximately one quarter of the total injury rate for officers;

(iv) the lowest proportion of sickness occurs amongst aircraft hands, who record both the lowest disease and injury rate.

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Table IX.—Nosological Table for the United Kingdom, Abroad, and the Total Force, 1923.

Disease.	United Kingdom. Average Strength, 20,239.						Abroad. Average Strength, 9,532.							Total Force. Average Strength, 29,771.					
	No. of cases.	No. of deaths.	No. finally invalided.	Ratio of cases per 1,000 of strength.	Averages.		No. of cases.	No. of deaths.	No. invalided to United Kingdom.	No. finally invalided.	Ratio of cases per 1,000 of strength.	Averages.		No. of cases.	No. of deaths.	No. finally invalided.	Ratio of cases per 1,000 of strength.	Averages.	
					No. sick daily.	Duration of case.						No. sick daily.	Duration of case.					No. sick daily.	Duration of case.
						Days.							Days.						Days.
Communicable Diseases.																			
Diphtheria	5	—	—	0·2	0·4	31·8	3	—	—	—	0·3	0·2	24·3	8	—	—	0·3	0·6	29·0
*Dysentery	7	—	—	0·3	0·6	31·3	205	—	23	—	21·5	21·4	38·2	212	—	—	7·1	22·0	38·0
*Enteric fever and para-typhoid	1	—	—	0·0	0·2	72·0	33	3	5	—	3·5	7·6	84·4	34	3	—	1·1	7·8	84·0
*Enteritis (acute) and gastro-enteritis (acute)	87	—	—	4·3	2·0	8·2	346	—	—	—	36·3	8·1	8·5	433	—	—	14·5	10·0	8·5
Impetigo contagiosa	309	—	—	15·3	14·2	16·8	77	—	—	—	8·1	3·5	16·4	386	—	—	13·0	17·7	16·7
*Influenza (including influenzal pneumonia)	323	1	—	16·0	8·1	9·1	67	—	—	—	7·0	1·8	9·8	390	1	—	13·1	9·9	9·2
*Malaria	59	—	2	2·9	1·6	9·6	1,025	1	12	—	107·5	33·6	11·9	1,084	1	2	36·4	35·2	11·8
Measles	7	—	—	0·3	0·4	19·3	2	—	—	—	0·2	0·2	31·5	9	—	—	0·3	0·5	22·0
Mumps	60	—	—	3·0	3·1	18·8	3	—	—	—	0·3	0·2	22·7	63	—	—	2·1	3·3	19·0
Pneumonia, lobar	44	3	—	2·2	3·6	29·5	21	3	1	—	2·2	2·2	39·0	65	6	—	2·2	5·8	32·6
*Pyrexia of unknown origin	62	—	—	3·1	1·5	8·6	32	—	—	—	3·4	1·1	12·1	94	—	—	3·2	2·5	9·8
Rubella	6	—	—	0·3	0·3	18·8	—	—	—	—	—	—	—	6	—	—	0·2	0·3	18·8
*Sandfly fever	—	—	—	—	—	—	1,488	—	1	—	156·1	27·2	6·7	1,488	—	—	50·0	27·2	6·7

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*Scabies	148	—	—	7·3	3·9	9·5	28	—	—	—	2·9	0·7	8·9	176	—	—	5·9	4·6	9·4
Scarlet fever	28	—	—	1·4	2·8	36·3	6	—	—	—	0·6	0·6	36·2	34	—	—	1·1	3·4	36·4
Smallpox	—	—	—	—	—	—	4	—	—	—	0·4	0·3	24·5	4	—	—	0·1	0·3	24·5
*Tuberculosis.																			
Respiratory	33	—	36	1·6	5·7	62·5	20	2	13	10	2·1	6·6	121·2	53	2	46	1·8	12·3	84·7
Other	6	—	7	0·3	1·1	69·3	5	1	3	—	0·5	1·4	101·2	11	1	7	0·4	2·5	83·8
Total—Tuberculosis	39	—	43	1·9	6·8	63·6	25	3	16	10	2·6	8·0	117·2	64	3	53	2·1	14·8	84·5
*Acute upper air passage infections.																			
Laryngitis	41	—	—	2·0	1·1	9·8	12	—	1	—	1·3	0·4	12·0	53	—	—	1·8	1·5	10·3
Inflammation of fauces, naso-pharyngitis and pharyngitis	751	—	—	37·1	14·4	7·0	232	—	—	—	24·3	4·1	6·5	983	—	—	33·0	18·5	6·9
Rhinitis, acute catarrhal	66	—	—	3·3	1·3	7·3	54	—	—	—	5·7	0·9	5·9	120	—	—	4·0	2·2	6·7
Tonsillitis (including quinsy and Vincent's Angina)	328	—	—	16·2	9·4	10·4	274	—	—	—	28·7	7·1	9·5	602	—	—	20·2	16·5	10·0
Total—Upper air passage infections	1,186	—	—	58·6	26·2	8·0	572	—	1	—	60·0	12·5	8·0	1,758	—	—	59·1	38·7	8·0
* Venereal Disease.																			
Gonorrhœa, acute	282	—	1	13·9	41·3	53·4	146	—	7	—	15·3	24·4	61·0	428	—	1	14·4	65·7	56·0
Gleet, relapse and other complications	106	—	3	5·2	14·7	50·5	41	—	3	—	4·3	5·8	51·3	147	—	3	4·9	20·4	50·7
Total—Gonorrhœa	388	—	4	19·2	60·0	52·6	187	—	10	—	19·6	30·2	58·9	575	—	4	19·3	86·1	54·7

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TABLE IX.—NOSOLOGICAL TABLE FOR THE UNITED KINGDOM, ABROAD, AND THE TOTAL FORCE, 1923—*cont.*

Disease.	United Kingdom. Average Strength, 20,239.						Abroad. Average Strength, 9,532.							Total Force. Average Strength, 29,771.					
	No. of cases.	No. of deaths.	No. finally invalided.	Ratio of cases per 1,000 of strength.	Averages.		No. of cases.	No. of deaths.	No. invalided to United Kingdom.	No. finally invalided.	Ratio of cases per 1,000 of strength.	Averages.		No. of cases.	No. of deaths.	No. finally invalided.	Ratio of cases per 1,000 of strength.	Averages.	
					No. sick daily.	Duration of case.						No. sick daily.	Duration of case.					No. sick daily.	Duration of case.
						Days.							Days.						Days.
Communicable Diseases—*cont.*																			
Syphilis :																			
Primary admissions	54	—	3	2·7	6·3	42·8	39	—	—	—	4·1	5·7	53·0	93	—	3	3·1	12·0	47·1
Admissions for further treatment	31	—	—	1·5	2·1	24·3	8	—	1	—	0·8	0·6	28·0	39	—	—	1·3	2·7	25·0
Total—Syphilis	85	—	3	4·2	8·4	36·0	47	—	1	—	4·9	6·3	48·8	132	—	3	4·4	14·7	40·6
Soft chancre	9	—	—	0·4	0·5	19·7	65	—	2	—	6·8	5·9	33·1	74	—	—	2·5	6·4	31·4
*Total—Venereal diseases	482	—	7	23·8	64·8	49·1	299	—	13	—	31·4	42·3	51·7	781	—	7	26·2	107·2	50·1
Other communicable diseases	166	1	1	8·2	5·8	12·8	35	1	2	—	3·6	3·3	35·1	201	2	1	6·8	9·1	16·7
*TOTAL — COMMUNICABLE DISEASES	3,019	5	53	149·2	146·1	17·7	4,271	11	74	10	448·1	174·8	14·9	7,290	16	63	244·9	321·0	16·1
1922	*3,951*	*9*	*50*	*187·7*	*190·2*	*17·6*	*4,297*	*7*	*42*	*10*	*547·2*	*164·5*	*13·9*	*8,248*	*16*	*60*	*284·9*	*354·6*	*15·7*

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Contacts and Carriers -	13	—	1	0·6	0·3	7·4	10	—	—	—	1·0	0·6	20·3	23	—	1	0·7	0·8	13·0
Other Common Diseases due to Infection.																			
Abscess, hand and finger -	65	—	—	3·2	2·2	12·2	22	—	—	—	2·3	1·0	17·4	87	—	—	2·9	3·2	13·5
Abscess, other - - -	107	—	—	5·3	5·3	18·0	48	—	—	—	5·0	2·0	14·9	155	—	—	5·2	7·2	17·0
Boils - - - -	133	—	—	6·6	3·7	10·1	83	—	1	—	8·7	2·6	11·5	216	—	—	7·3	6·3	10·7
Carbuncle - - - -	16	—	—	0·8	0·6	12·6	14	—	—	—	1·5	0·7	19·4	30	—	—	1·0	1·3	15·8
Cellulitis - - - -	166	—	—	8·2	5·5	12·1	201	—	—	—	21·1	7·9	14·3	367	—	—	12·3	13·4	13·3
Gangrene - - - -	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Lymphadenitis and lymphangitis - - -	34	—	—	1·7	1·5	16·1	22	—	1	—	2·3	1·6	26·7	56	—	—	1·9	3·1	20·3
Osteo-myelitis, periostitis, osteitis - - - -	12	—	—	0·6	1·2	37·5	7	—	2	2	0·7	2·6	134·3	19	—	2	0·6	3·8	73·2
Pyæmia, septicæmia - -	5	4	—	0·2	0·2	16·0	1	—	—	—	0·1	0·2	66·0	6	4	—	0·2	0·4	24·2
Ulcer - - - - -	10	—	—	0·5	0·6	20·5	13	—	—	—	1·4	1·1	30·6	23	—	—	0·8	1·7	26·2
TOTAL—OTHER COMMON DISEASES DUE TO INFECTION - - -	548	4	—	27·1	20·7	13·8	411	—	4	2	43·1	19·7	17·5	959	4	2	32·2	40·4	15·4
1922	*482*	*2*	*2*	*22·9*	*20·6*	*15·6*	*357*	*4*	*5*	—	*45·6*	*15·5*	*15·8*	*839*	*6*	*2*	*29·0*	*36·1*	*15·7*
Effects of Parasites - -	4	—	—	0·2	0·1	10·5	4	—	—	—	0·4	0·1	10·0	8	—	—	0·3	0·2	10·3
Diseases of Nervous System and Brain.																			
Neuritis - - - -	25	—	1	1·2	1·4	20·0	17	—	4	—	1·8	2·4	51·8	42	—	1	1·4	3·8	32·8
Nerve paralysis - -	6	—	1	0·3	0·4	26·5	1	—	—	—	0·1	0·1	48·0	7	—	1	0·2	0·6	29·6
Epilepsy (including observation cases) - - -	27	—	10	1·3	1·2	16·8	14	—	5	4	1·5	2·1	55·6	41	—	14	1·4	3·4	30·1

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TABLE IX.—NOSOLOGICAL TABLE FOR THE UNITED KINGDOM, ABROAD, AND THE TOTAL FORCE, 1923—*cont.*

Disease.	United Kingdom. Average Strength, 20,239.						Abroad. Average Strength, 9,532.							Total Force. Average Strength, 29,771.					
	No. of cases.	No. of deaths.	No. finally invalided.	Ratio of cases per 1,000 of strength.	Averages.		No. of cases.	No. of deaths.	No. invalided to United Kingdom.	No. finally invalided.	Ratio of cases per 1,000 of strength.	Averages.		No. of cases.	No. of deaths.	No. finally invalided.	Ratio of cases per 1,000 of strength.	Averages.	
					No. sick daily.	Duration of case.						No. sick daily.	Duration of case.					No. sick daily.	Duration of case.
						Days.							Days.						Days.
Diseases of Nervous System and Brain—*cont.*																			
Neurasthenia	53	—	24	2·6	3·7	25·2	56	—	23	2	5·9	7·0	45·8	109	—	26	3·7	10·7	35·8
Mental diseases (including observation cases)	24	—	21	1·2	4·6	70·1	8	1	5	3	0·8	3·1	139·4	32	1	24	1·1	7·6	87·4
Other diseases of nervous system	72	—	21	3·6	3·8	19·3	35	1	10	3	3·7	3·1	32·6	107	1	24	3·6	6·9	23·7
TOTAL—DISEASES OF NERVOUS SYSTEM AND BRAIN	207	—	78	10·3	15·1	26·7	131	2	*47*	12	13·7	17·9	49·8	338	2	90	11·3	33·0	35·7
1922	*191*	*1*	*81*	*9·1*	*18·0*	*34·4*	*95*	—	*19*	*20*	*12·1*	*11·9*	*45·8*	*286*	*1*	*101*	*9·9*	*30·0*	*38·2*
Diseases of the Eye.																			
Infections	71	—	8	3·5	4·7	24·2	45	—	5	1	4·7	3·4	27·4	116	—	9	3·9	8·1	25·4
Other diseases of the eye	43	—	22	2·1	1·1	9·0	20	—	10	2	2·1	1·8	32·2	63	—	24	2·1	2·8	16·3
TOTAL—DISEASES OF EYE	114	—	30	5·6	5·8	18·4	65	—	15	3	6·8	5·1	28·9	179	—	33	6·0	10·9	22·2
1922	*124*	—	*34*	*5·9*	*6·1*	*17·8*	*56*	—	*10*	*3*	*7·1*	*5·2*	*34·0*	*180*	—	*37*	*6·2*	*11·3*	*22·8*

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Diseases of Ear and Nose.																			
Otitis media, acute	22	—	—	1·1	1·3	21·9	17	—	—	—	1·8	1·1	24·1	39	—	—	1·3	2·4	22·8
Otitis media, chronic	56	—	27	2·8	2·7	17·8	22	—	8	2	2·3	3·0	50·4	78	—	29	2·6	5·8	26·9
Other diseases of ear and nose	99	—	15	4·9	4·2	15·5	38	—	—	—	4·0	1·7	16·7	137	—	15	4·6	5·9	15·8
TOTAL—DISEASES OF EAR AND NOSE	177	—	42	8·7	8·2	17·0	77	—	8	2	8·1	5·9	27·9	254	—	44	8·5	14·1	20·3
1922	*183*	—	*49*	*8·7*	*10·7*	*21·4*	*69*	—	*6*	*2*	*8·8*	*4·4*	*23·2*	*252*	—	*51*	*8·7*	*15·1*	*21·9*
Diseases of the Circulatory System.																			
Endocarditis, acute	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Valvular disease of the heart	12	1	11	0·6	1·0	31·8	5	—	1	—	0·5	0·4	27·4	17	1	11	0·6	1·4	30·5
Disease of myocardium	4	—	—	0·2	0·4	34·8	1	—	—	—	0·1	0·1	44·0	5	—	—	0·2	0·5	36·6
Disordered action of the heart	52	1	10	2·6	3·1	21·7	39	1	13	1	4·1	5·3	49·8	91	2	11	3·1	8·4	33·7
Varix	19	—	5	0·9	0·9	17·4	7	—	1	—	0·7	0·4	22·1	26	—	5	0·9	1·3	18·7
Other diseases of the circulatory system	8	—	3	0·4	0·5	24·8	11	—	2	2	1·2	0·9	29·5	19	—	5	0·6	1·4	27·5
TOTAL—DISEASES OF THE CIRCULATORY SYSTEM	95	2	29	4·7	6·0	22·9	63	1	17	3	6·6	7·1	41·3	158	3	32	5·3	13·1	30·2
1922	*125*	*2*	*35*	*5·9*	*7·8*	*22·9*	*105*	*1*	*29*	*11*	*13·4*	*15·8*	*54·9*	*230*	*3*	*46*	*8·0*	*23·6*	*37·5*
Diseases of lymphatic system and ductless glands	4	—	3	0·2	0·2	20·0	1	—	—	—	0·1	0·0	13·0	5	—	3	0·2	0·3	18·6

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TABLE IX.—NOSOLOGICAL TABLE FOR THE UNITED KINGDOM, ABROAD, AND THE TOTAL FORCE, 1923—*cont.*

Disease.	United Kingdom. Average Strength, 20,239.						Abroad. Average Strength, 9,532.							Total Force. Average Strength, 29,771.					
	No. of cases.	No. of deaths.	No. finally invalided.	Ratio of cases per 1,000 of strength.	Averages.		No. of cases.	No. of deaths.	No. invalided to United Kingdom.	No. finally invalided.	Ratio of cases per 1,000 of strength.	Averages.		No. of cases.	No. of deaths.	No. finally invalided.	Ratio of cases per 1,000 of strength.	Averages.	
					No. sick daily.	Duration of case.						No. sick daily.	Duration of case.					No. sick daily.	Duration of case.
						Days.							Days.						Days.
Diseases of the Respiratory System.																			
Bronchitis	179	—	9	8·8	6·2	12·7	108	1	2	2	11·3	4·3	14·5	287	1	11	9·6	10·5	13·4
Asthma	10	—	—	0·5	0·2	8·4	5	—	—	—	0·5	0·1	10·8	15	—	—	0·5	0·4	9·2
Broncho-pneumonia	3	—	—	0·1	0·2	29·7	11	3	—	—	1·2	1·1	35·2	14	3	—	0·5	1·3	34·0
Pleurisy	48	—	—	2·4	4·5	34·4	26	—	2	—	2·7	2·4	33·5	74	—	—	2·5	6·9	34·1
Other diseases of the respiratory system	7	—	1	0·3	0·5	28·6	—	—	—	—	—	—	—	7	—	1	0·2	0·5	28·6
TOTAL—DISEASES OF THE RESPIRATORY SYSTEM	247	—	10	12·2	11·8	17·4	150	4	4	2	15·7	7·9	19·2	397	4	12	13·3	19·7	18·1
1922	*245*	*3*	*8*	*11·6*	*12·5*	*18·7*	*122*	*2*	*5*	*3*	*15·5*	*8·0*	*23·9*	*367*	*5*	*11*	*12·7*	*20·5*	*20·4*
Disease of teeth and gums	54	—	—	2·7	1·6	10·5	41	—	—	—	4·3	1·0	8·5	95	—	—	3·2	2·5	9·6

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Diseases of the Digestive System.																			
Hypertrophy of tonsils	58	—	—	2·9	3·2	20·1	7	—	—	—	0·7	0·6	32·3	65	—	—	2·2	3·8	21·4
Gastritis, acute	21	—	—	1·0	0·9	16·4	15	—	—	—	1·6	0·4	10·6	36	—	—	1·2	1·4	14·6
Gastritis, chronic	14	—	6	0·7	0·9	24·1	6	—	4	—	0·6	1·8	112·0	20	—	6	0·7	2·8	50·5
Dyspepsia	78	—	—	3·9	2·4	11·2	43	—	—	—	4·5	1·5	12·6	121	—	—	4·1	3·9	11·7
Appendicitis	107	3	2	5·3	8·7	29·6	45	—	1	1	4·7	4·1	33·4	152	3	3	5·1	12·8	30·7
Hernia	76	—	3	3·8	5·1	24·4	7	—	—	—	0·7	0·7	35·0	83	—	3	2·8	5·7	25·3
Constipation	84	—	—	4·2	1·7	7·4	130	—	—	—	13·6	2·5	6·9	214	—	—	7·2	4·2	7·1
Colic	31	—	—	1·5	0·8	9·1	40	—	—	—	4·2	0·8	7·7	71	—	—	2·4	1·6	8·3
Hæmorrhoids	59	—	—	2·9	3·1	19·0	47	—	—	—	4·9	2·1	16·7	106	—	—	3·6	5·2	18·0
Jaundice	34	—	—	1·7	1·9	20·9	94	—	1	—	9·9	5·2	20·0	128	—	—	4·3	7·1	20·2
Other diseases of digestive system	45	—	4	2·2	3·2	26·3	57	1	2	—	6·0	3·6	23·0	102	1	4	3·4	6·8	24·5
TOTAL—DISEASES OF DIGESTIVE SYSTEM	607	3	15	30·0	31·9	19·2	491	1	8	1	51·5	23·4	17·4	1,098	4	16	36·9	55·3	18·4
1922	*589*	*3*	*18*	*27·9*	*30·8*	*19·1*	*454*	*5*	*9*	*2*	*57·8*	*21·3*	*17·1*	*1,043*	*8*	*20*	*36·1*	*52·1*	*18·2*
Diseases due to disorders of nutrition or metabolism	2	—	—	0·1	0·0	5·5	—	—	—	—	—	—	—	2	—	—	0·1	0·0	5·5
Diseases of the Generative System.																			
Phimosis	29	—	—	1·4	1·5	19·4	20	—	—	—	2·1	1·2	21·5	49	—	—	1·6	2·7	20·3
Varicocele	14	—	1	0·7	0·7	18·4	3	—	—	—	0·3	0·2	21·3	17	—	1	0·6	0·9	18·9
Other diseases of the generative system	92	—	—	4·5	4·2	16·7	80	—	1	—	8·4	3·8	17·2	172	—	—	5·7	8·0	16·9
TOTAL—DISEASES OF THE GENERATIVE SYSTEM	135	—	1	6·7	6·5	17·4	103	—	1	—	10·8	5·1	18·1	238	—	1	8·0	11·6	17·7
1922	*147*	—	—	*7·0*	*7·0*	*17·5*	*73*	—	*1*	—	*9·3*	*3·7*	*18·4*	*220*	—	—	*7·6*	*10·7*	*17·8*

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TABLE IX.—NOSOLOGICAL TABLE FOR THE UNITED KINGDOM, ABROAD, AND THE TOTAL FORCE, 1923—*cont.*

Disease.	United Kingdom. Average Strength, 20,239.						Abroad. Average Strength, 9,532.							Total Force. Average Strength, 29,771.					
	No. of cases.	No. of deaths.	No. finally invalided.	Ratio of cases per 1,000 of strength.	Averages.		No. of cases.	No. of deaths.	No. invalided to United Kingdom.	No. finally invalided.	Ratio of cases per 1,000 of strength.	Averages.		No. of cases.	No. of deaths.	No. finally invalided.	Ratio of cases per 1,000 of strength.	Averages.	
					No. sick daily.	Duration of case.						No. sick daily.	Duration of case.					No. sick daily.	Duration of case.
						Days.							Days.						Days.
Diseases of Organs of Locomotion.																			
Diseases of the bone -	17	—	6	0·8	1·9	41·6	2	—	2	1	0·2	0·3	55·0	19	—	7	0·6	2·2	43·1
Diseases of the joints -	97	—	11	4·8	5·6	21·2	51	—	8	1	5·4	4·3	30·5	148	—	12	5·0	9·9	24·4
Myalgia and lumbago -	77	—	—	3·8	2·2	10·3	50	—	—	—	5·2	1·1	8·1	127	—	—	4·3	3·3	9·4
Diseases of muscles, tendons and bursae - -	30	—	2	1·5	1·1	13·6	10	—	1	1	1·0	0·6	21·7	40	—	3	1·3	1·7	15·6
Deformities of limbs -	53	—	29	2·6	1·8	12·2	12	—	3	2	1·3	1·5	44·8	65	—	31	2·2	3·2	18·2
TOTAL—DISEASES OF ORGANS OF LOCOMOTION - - - - -	274	—	48	13·5	12·6	16·8	125	—	14	5	13·1	7·7	22·6	399	—	53	13·4	20·4	18·6
1922	*285*	—	*54*	*13·5*	*13·1*	*16·8*	*126*	—	*2*	—	*16·0*	*6·3*	*18·2*	*411*	—	*54*	*14·2*	*19·4*	*17·2*
Diseases of areolar tissue and skin - -	282	—	7	13·9	13·0	16·9	132	—	2	1	13·8	6·1	16·7	414	—	8	13·9	19·1	16·8

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Diseases of Urinary Organs.																		
Nephritis	11	1	4	0·5	1·4	45·6	7	1	3	—	0·7	1·1	57·9	18	2	4	0·6	2·5	50·4
Incontinence of urine	10	—	3	0·5	0·4	14·7	4	—	1	—	0·4	0·5	46·5	14	—	3	0·5	0·9	23·8
Other diseases of urinary organs	30	—	1	1·5	2·3	28·5	26	—	5	2	2·7	3·7	51·2	56	—	3	1·9	6·0	39·1
TOTAL—DISEASES OF URINARY ORGANS	51	1	8	2·5	4·1	29·5	37	1	9	2	3·9	5·3	52·0	88	2	10	3·0	9·4	39·0
1922	*44*	—	*12*	*2·1*	*3·9*	*32·4*	*15*	—	*2*	*1*	*1·9*	*1·5*	*37·0*	*59*	—	*13*	*2·0*	*5·4*	*33·6*
Tumours and Cysts.																		
Tumours, non-malignant	14	—	1	0·7	0·6	16·5	14	—	—	—	1·5	0·7	18·3	28	—	1	0·9	1·3	17·4
Tumours, malignant	3	1	1	0·1	0·8	92·7	1	—	1	—	0·1	0·1	27·0	4	1	1	0·1	0·8	76·2
Cysts	39	—	—	1·9	1·6	15·1	7	—	—	—	0·7	0·4	18·6	46	—	—	1·5	2·0	15·7
TOTAL—TUMOURS AND CYSTS	56	1	2	2·8	3·0	19·6	22	—	1	—	2·3	1·1	18·8	78	1	2	2·6	4·1	19·4
1922	*58*	—	*2*	*2·8*	*2·6*	*16·4*	*18*	*2*	*3*	*2*	*2·3*	*2·2*	*43·6*	*76*	*2*	*4*	*2·6*	*4·8*	*22·8*
Poisons.																		
Effects of alcohol	3	—	—	0·1	0·2	20·0	5	—	2	1	0·5	0·7	50·8	8	—	1	0·3	0·9	39·3
Other poisons	12	1	—	0·6	0·3	7·9	44	1	—	—	4·6	0·7	5·9	56	2	—	1·9	1·0	6·3
TOTAL—POISONS	15	1	—	0·7	0·4	10·2	49	1	2	1	5·1	1·4	10·5	64	2	1	2·1	1·8	10·4
1922	*56*	—	—	*2·7*	*0·8*	*5·2*	*11*	*1*	*1*	—	*1·4*	*0·6*	*19·5*	*67*	*1*	—	*2·3*	*1·4*	*7·5*

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TABLE IX.—NOSOLOGICAL TABLE FOR THE UNITED KINGDOM, ABROAD, AND THE TOTAL FORCE, 1923—*cont.*

Disease.	United Kingdom. Average Strength, 20,239.						Abroad. Average Strength, 9,532.							Total Force. Average Strength, 29,771.					
	No. of cases.	No. deaths.	No. finally invalided.	Ratio of cases per 1,000 of strength.	Averages.		No. of cases.	No. of deaths.	No. invalided to United Kingdom.	No. finally invalided.	Ratio of cases per 1,000 of strength.	Averages.		No. of cases.	No. of deaths.	No. finally invalided.	Ratio of cases per 1,000 of strength.	Averages.	
					No. sick daily.	Duration of case.						No. sick daily.	Duration of case.					No. sick daily.	Duration of case.
						Days.							Days.						Days.
No appreciable disease -	67	—	—	3·3	1·5	8·0	21	—	—	—	2·2	0·5	8·8	88	—	—	3·0	2·0	8·2
Debility - - - - -	20	—	1	1·0	0·9	16·3	57	—	16	—	6·0	6·2	39·4	77	—	1	2·6	7·0	33·4
* TOTAL—ALL DISEASES -	5,991	17	328	296·0	289·8	17·7	6,261	21	222	44	656·8	296·8	17·3	12,252	38	372	411·5	586·6	17·5
1922	*6,982*	*20*	*366*	*331·3*	*346·7*	*18·1*	*5,991*	*22*	*143*	*54*	*763·1*	*270·3*	*16·5*	*12,973*	*42*	*420*	*448·5*	*616·9*	*17·4*
*** General Injuries.**																			
Burns and Scalds - -	6	5	—	0·3	0·1	7·7	14	8	—	—	1·5	0·5	13·2	20	13	—	0·7	0·6	11·6
Heatstroke, sunstroke and heat exhaustion - -	3	—	—	0·1	0·0	4·3	46	1	1	—	4·8	1·2	9·6	49	1	—	1·6	1·2	9·2
Suffocation and strangulation - - - -	1	1	—	0·0	0·0	1·0	1	1	—	—	0·1	0·0	1·0	2	2	—	0·1	0·0	1·0
Drowning - - - -	—	—	—	—	—	—	10	10	—	—	1·0	0·0	0·0	10	10	—	0·3	0·0	0·0
Multiple minor injuries -	53	—	—	2·6	1·8	12·1	14	—	—	—	1·5	0·4	10·7	67	—	—	2·3	2·2	11·8
Multiple fractures - -	15	11	—	0·7	1·2	28·1	8	8	1	—	0·8	1·0	45·6	23	19	—	0·8	2·2	34·2

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Gunshot wounds - -	—	—	—	—	—	—	2	—	—	—	0·2	0·1	13·5	2	—	—	0·1	0·1	13·5
Multiple wounds - -	5	3	—	0·2	0·3	21·2	5	1	—	—	0·5	0·5	38·8	10	4	—	0·3	0·8	30·0
Others - - - - -	6	1	—	0·3	0·2	11·0	1	—	—	—	0·1	0·0	6·0	7	1	—	0·2	0·2	10·1
TOTAL—GENERAL INJURIES	89	21	—	4·4	3·5	14·5	101	29	2	—	10·6	3·7	13·5	190	50	—	6·4	7·3	14·0
1922	*79*	*22*	*1*	*3·8*	*5·1*	*23·8*	*246*	*36*	*3*	—	*31·2*	*8·0*	*11·5*	*325*	*58*	*1*	*11·2*	*13·1*	*14·8*
Local Injuries.																			
(i) *Head and Neck.*																			
Contusions and wounds -	84	—	—	4·2	2·1	9·0	41	—	1	—	4·3	1·2	10·7	125	—	—	4·2	3·3	9·6
Gunshot wounds - -	1	1	—	0·0	0·0	0·0	2	2	—	—	0·2	0·0	0·0	3	3	—	0·1	0·0	0·0
Burns and scalds - -	8	—	—	0·4	0·4	16·0	5	—	—	—	0·5	0·1	5·2	13	—	—	0·4	0·4	11·8
Fracture of skull - -	23	13	—	1·1	1·4	22·3	10	7	4	—	1·0	1·1	39·1	33	20	—	1·1	2·5	27·4
Concussion of brain - -	41	—	—	2·0	1·7	14·8	18	—	2	—	1·9	1·1	23·0	59	—	—	2·0	2·8	17·3
Other fractures - -	2	—	—	0·1	0·1	22·5	2	—	—	—	0·2	0·2	28·0	4	—	—	0·1	0·3	25·3
Other injuries - - -	31	—	—	1·5	1·8	21·1	19	1	1	—	2·0	0·9	17·8	50	1	—	1·7	2·7	19·9
TOTAL—*Head and Neck* -	190	14	—	9·4	7·4	14·2	97	10	8	—	10·2	4·6	17·2	287	24	—	9·6	12·0	15·2
(ii) *Trunk.*																			
Contusions and wounds -	38	—	—	1·9	1·2	11·9	24	1	—	—	2·5	0·6	9·7	62	1	—	2·1	1·9	11·0
Gunshot wounds - -	1	1	—	0·0	0·0	0·0	—	—	—	—	—	1·0	—	1	1	—	0·0	1·0	365·0
Fractures - - - -	7	1	—	0·3	0·2	12·6	4	1	—	—	0·4	0·2	18·0	11	2	—	0·4	0·4	14·5
Other injuries - - -	13	—	—	0·6	0·4	10·9	5	—	—	—	0·5	0·1	7·4	18	—	—	0·6	0·5	9·9
TOTAL—*Trunk* - -	59	2	—	2·9	1·9	11·5	33	2	—	—	3·5	1·9	21·4	92	4	—	3·1	3·8	15·1

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TABLE IX.—NOSOLOGICAL TABLE FOR THE UNITED KINGDOM, ABROAD, AND THE TOTAL FORCE, 1923—*cont.*

Disease.	United Kingdom. Average Strength, 20,239.						Abroad. Average Strength, 9,532.							Total Force. Average Strength, 29,771.					
	No. of cases.	No. of deaths.	No. finally invalided.	Ratio of cases per 1,000 of strength.	Averages.		No. of cases.	No. of deaths.	No. invalided to United Kingdom.	No. finally invalided.	Ratio of cases per 1,000 of strength.	Averages.		No. of cases.	No. of deaths.	No. finally invalided.	Ratio of cases per 1,000 of strength.	Averages.	
					No. sick daily.	Duration of case.						No. sick daily.	Duration of case.					No. sick daily.	Duration of case.
						Days.							Days.						Days.
LOCAL INJURIES—*cont.*																			
(iii) *Upper Extremity.*																			
Contusions and wounds -	108	—	1	5·3	4·0	13·5	55	—	—	—	5·8	2·5	16·3	163	—	1	5·5	6·5	14·5
Gunshot wounds - -	—	—	—	—	—	—	1	—	—	—	0·1	0·1	23·0	1	—	—	0·0	0·1	23·0
Burns and scalds - -	9	—	—	0·4	0·2	8·2	11	—	—	—	1·2	0·9	28·9	20	—	—	0·7	1·1	19·6
Fractures - - - -	74	—	2	3·7	7·1	35·0	62	—	1	—	6·5	6·3	37·3	136	—	2	4·6	13·4	36·0
Dislocations - - -	16	—	—	0·8	0·8	17·6	5	—	—	—	0·5	0·3	22·2	21	—	—	0·7	1·1	18·7
Sprains - - - -	15	—	—	0·7	0·7	16·1	7	—	—	—	0·7	0·1	7·3	22	—	—	0·7	0·8	13·3
Other injuries - - -	6	—	—	0·3	0·2	13·8	3	—	—	—	0·3	0·1	6·3	9	—	—	0·3	0·3	11·4
(iv) TOTAL — *Upper Extremity* - -	228	—	3	11·3	13·0	20·7	144	—	1	—	15·1	10·2	25·9	372	—	3	12·5	23·2	22·7
(v) TOTAL — *Hand and Wrist* - - -	110	—	3	5·4	4·7	15·6	80	—	—	—	8·4	4·4	20·1	190	—	3	6·4	9·1	17·5
(vi) TOTAL—*Rest of Limb* -	118	—	—	5·8	8·3	25·5	64	—	1	—	6·7	5·8	33·2	182	—	—	6·1	14·1	28·2

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(vii) Lower Extremity.																			
Contusions and wounds -	212	—	—	10·5	8·4	14·5	102	—	—	—	10·7	3·8	13·7	314	—	—	10·5	12·2	14·2
Gunshot wounds - -	—	—	1	—	0·4	—	5	—	—	—	0·5	0·6	43·0	5	—	1	0·2	1·0	72·6
Burns and scalds - -	14	—	—	0·7	0·6	16·0	8	—	—	—	0·8	0·6	25·3	22	—	—	0·7	1·2	19·4
Fractures - - - -	59	—	3	2·9	12·1	74·9	28	—	2	—	2·9	5·2	67·3	87	—	3	2·9	17·3	72·4
Dislocations - - -	—	—	—	—	0·3	—	1	—	—	—	0·1	0·0	6·0	1	—	—	0·0	0·3	100·0
Sprains - - - -	158	—	—	7·8	6·2	14·3	73	—	—	—	7·7	2·2	10·9	231	—	—	7·8	8·4	13·2
Other injuries - - -	171	—	—	8·4	7·6	16·2	81	—	—	—	8·5	3·2	14·4	252	—	—	8·5	10·8	15·6
(viii) TOTAL—*Lower Extremity* - -	614	—	4	30·3	35·6	21·1	298	—	2	—	31·3	15·5	19·0	912	—	4	30·6	51·1	20·4
(ix) TOTAL—*Foot and Ankle* - -	220	—	—	10·9	7·7	12·7	99	—	—	—	10·4	3·5	12·8	319	—	—	10·7	11·1	12·7
(x) TOTAL—*Knee* -	201	—	—	9·9	11·7	21·3	97	—	—	—	10·2	3·9	14·8	298	—	—	10·0	15·7	19·2
(xi) TOTAL — *Rest of Limb* - -	193	—	4	9·5	16·1	30·5	102	—	2	—	10·7	8·1	29·1	295	—	4	9·9	24·3	30·0
*TOTAL—ALL LOCAL INJURIES - - - -	1,091	16	7	53·9	57·8	19·3	572	12	11	—	60·0	32·3	20·6	1,663	28	7	55·9	90·0	19·7
1922 -	*999*	*11*	*9*	*47·4*	*50·5*	*18·5*	*571*	*13*	*14*	*7*	*72·8*	*30·2*	*19·3*	*1,570*	*24*	*16*	*54·4*	*80·7*	*18·8*
*TOTAL—ALL INJURIES -	1,180	37	7	58·3	61·3	19·0	673	41	13	—	70·6	36·0	19·5	1,853	78	7	62·2	97·3	19·2
1922 -	*1,078*	*33*	*10*	*51·2*	*55·7*	*18·8*	*817*	*49*	*17*	*7*	*104·0*	*38·2*	*17·0*	*1,895*	*82*	*17*	*65·5*	*93·8*	*18·1*
*TOTAL—ALL DISEASES -	5,991	17	328	296·0	289·8	17·7	6,261	21	222	44	656·8	296·8	17·3	12,252	38	372	411·5	586·6	17·5
1922 -	*6,982*	*20*	*366*	*331·3*	*346·7*	*18·1*	*5,991*	*22*	*143*	*54*	*763·1*	*270·3*	*16·5*	*12,973*	*42*	*420*	*448·5*	*616·9*	*17·4*
*TOTAL—ALL DISABILITIES	7,171	54	335	354·3	351·2	17·9	6,934	62	235	44	727·4	332·8	17·5	14,105	116	379	473·8	684·0	17·7
1922 -	*8,060*	*53*	*376*	*382·5*	*402·4*	*18·2*	*6,809*	*71*	*160*	*61*	*867·2*	*308·4*	*16·5*	*14,869*	*124*	*437*	*514·0*	*710·8*	*17·4*

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TABLE X.—NOSOLOGICAL TABLE OF COMMUNICABLE

Disease.	United Kingdom. Average strength, 20,239.					Mediterranean Littoral. Average strength, 4,112.					
	Ratio per 1,000 of average strength.			Averages.		Ratio per 1,000 of average strength.				Averages.	
	Cases.	Deaths.	Finally invalided.	No. sick daily.	Duration of case.	Cases.	Deaths.	Invalided to United Kingdom.	Finally invalided.	No. sick daily.	Duration of case.
Communicable Diseases.											
Dysentery—					Days.						Days.
Clinical, primary	—	—	—	—	—	6·3	—	—	—	1·2	17·2
„ recurrent	—	—	—	—	—	2·2	—	—	—	0·6	23·1
Bacillary, primary	—	—	—	—	—	2·9	—	—	—	1·1	32·1
„ recurrent	—	—	—	—	—	0·7	—	0·24	—	0·5	62·3
Amœbic, primary	—	—	—	—	—	2·2	—	0·24	—	0·9	37·3
„ recurrent	0·3	—	—	0·6	31·3	1·0	—	0·24	—	0·6	53·5
TOTAL—Dysentery	0·3	—	—	0·6	31·3	15·3	—	0·73	—	4·9	28·2
Enteric fever	0·0	—	—	0·2	72·0	0·5	0·24	—	—	0·5	82·5
Paratyphoid	—	—	—	—	—	1·2	—	0·24	—	1·0	73·2
Enteritis	4·3	—	—	2·0	8·2	33·3	—	—	—	3·1	8·2
Influenza	16·0	0·05	—	8·1	9·1	3·2	—	—	—	0·3	8·8
Malaria—											
Clinical, primary	—	—	—	—	—	2·4	—	—	—	0·4	12·9
„ recurrent	0·7	—	—	0·3	8·7	4·4	—	0·24	—	0·6	11·8
Benign tertiary, primary	—	—	—	—	—	9·0	—	—	—	1·5	15·1
„ „ recurrent	2·1	—	0·10	1·2	10·2	5·3	—	—	—	0·5	8·6
Quartan, primary and recurrent	—	—	—	—	—	—	—	—	—	—	—
Malignant tertian, primary	—	—	—	—	—	5·3	—	—	—	1·2	19·3
„ „ recurrent	0·1	—	—	0·0	5·7	—	—	0·24	—	0·3	104·0
Cachexia	—	—	—	—	—	—	—	—	—	—	—
TOTAL—Malaria	2·9	—	0·10	1·6	9·6	26·5	—	0·49	—	4·4	14·9
Pyrexia of unknown origin	3·1	—	—	1·5	8·6	4·6	—	—	—	0·6	10·9
Sandfly fever	—	—	—	—	—	91·4	—	—	—	7·4	7·2
Scabies	7·3	—	—	3·9	9·5	3·9	—	—	—	0·3	7·8
Tuberculosis	1·9	—	2·11	6·8	63·6	3·9	0·73	1·70	1·70	4·1	92·4
Upper air passage infections	58·6	—	—	26·2	8·0	74·9	—	0·24	—	6·4	7·6
Venereal disease, primary	16·6	—	0·05	46·0	50·1	36·5	—	2·19	—	21·8	52·9
„ „ other	7·3	—	0·29	18·8	46·7	7·8	—	0·49	—	4·0	45·3
TOTAL—Venereal disease	23·8	—	0·35	64·8	49·1	44·3	—	2·68	—	25·7	51·6
Other communicable diseases	30·9	0·20	0·05	30·6	17·9	15·3	0·49	0·24	—	4·4	25·5
Other diseases	146·8	0·59	13·58	143·7	17·6	199·7	—	10·94	3·89	44·8	19·9
TOTAL—All diseases	296·0	0·84	16·21	289·8	17·7	518·0	1·46	17·27	5·59	108·0	18·5
Injuries:—											
General injuries	4·4	1·04	—	3·5	14·5	12·6	2·92	—	—	1·4	10·1
Local injuries	53·9	0·79	0·34	57·8	19·3	63·7	0·97	0·97	—	13·9	19·3
TOTAL—All injuries	58·3	1·83	0·34	61·3	19·0	76·4	3·89	0·97	—	15·3	17·8
TOTAL—All disabilities	354·3	2·66	16·55	351·2	17·9	594·4	5·35	18·24	5·59	123·6	18·4

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Diseases by Geographical Areas, 1923.

Iraq. Average strength, 3,524.						India. Average strength, 1,896.						Total. Average strength, 29,771.				
Ratio per 1,000 of average strength.				Averages.		Ratio per 1,000 of average strength.				Averages.		Ratio per 1,000 of average strength.			Averages.	
Cases.	Deaths.	Invalided to United Kingdom.	Finally invalided.	No. sick daily.	Duration of case.	Cases.	Deaths.	Invalided to United Kingdom.	Finally invalided.	No. sick daily.	Duration of case.	Cases.	Deaths.	Finally invalided.	No. sick daily.	Duration of case.
					Days.						Days.					Days.
6·2	—	—	—	1·3	21·9	1·6	—	—	—	0·1	10·7	1·7	—	—	2·6	18·8
1·1	—	—	—	0·3	29·0	1·1	—	—	—	0·1	10·0	0·5	—	—	0·9	22·9
0·6	—	0·28	—	0·6	116·5	0·5	—	—	—	0·1	34·0	0·5	—	—	1·8	48·5
0·3	—	0·57	—	1·1	390·0	—	—	—	—	—	—	0·1	—	—	1·6	144·3
17·9	—	1·70	—	8·2	47·7	6·3	—	—	—	0·6	19·6	2·8	—	—	9·8	42·6
4·5	—	1·99	—	3·0	68·2	8·4	—	2·11	—	1·1	25·9	1·4	—	—	5·8	45·1
30·6	—	4·54	—	14·6	49·2	17·9	—	2·11	—	2·0	21·6	7·1	—	—	22·0	38·0
4·0	0·28	0·85	—	2·7	69·6	2·1	0·53	—	—	1·6	152·3	0·7	0·10	—	5·0	86·7
2·0	—	0·28	—	1·5	80·1	0·5	—	—	—	0·3	110·0	0·4	—	—	2·9	80·0
48·8	—	—	—	4·3	9·0	19·5	—	—	—	0·8	7·4	14·5	—	—	10·0	8·5
14·8	—	—	—	1·4	10·1	1·1	—	—	—	0·0	6·0	13·1	0·03	—	9·9	9·2
7·7	—	—	—	1·0	13·0	29·0	—	—	—	1·3	8·3	3·1	—	—	2·6	10·2
4·5	—	—	—	0·5	11·1	15·8	—	—	—	0·7	8·1	2·6	—	—	2·0	9·7
74·9	—	0·28	—	8·7	12·0	70·0	—	—	—	2·9	8·1	14·5	—	—	13·1	11·0
57·6	—	1·13	—	7·2	13·2	67·1	—	—	—	3·1	8·8	13·2	—	0·07	12·0	11·1
0·6	—	—	—	0·1	9·5	—	—	—	—	—	—	0·7	—	—	0·1	9·5
3·7	—	—	—	1·3	36·7	7·4	0·53	—	—	0·3	6·8	1·6	0·03	—	2·7	20·3
2·3	—	0·85	—	1·3	58·4	11·6	—	0·53	—	0·7	11·0	1·1	—	—	2·3	25·2
—	—	—	—	—	—	1·1	—	0·53	—	0·3	57·0	0·1	—	—	0·3	57·0
151·2	—	2·27	—	20·0	13·7	202·0	0·53	1·05	—	9·1	8·7	36·4	0·03	0·07	35·2	11·8
2·8	—	—	—	0·4	15·5	1·6	—	—	—	0·1	8·0	3·2	—	—	2·5	9·8
301·6	—	0·28	—	18·9	6·5	25·8	—	—	—	0·8	6·3	50·0	—	—	27·2	6·7
3·1	—	—	—	0·3	10·8	0·5	—	—	—	0·0	6·0	5·9	—	—	4·6	9·4
1·7	—	1·70	0·85	3·0	180·8	1·6	—	1·58	—	1·0	122·0	2·1	0·10	1·78	14·8	84·5
60·7	—	—	—	5·1	8·7	26·4	—	—	—	0·9	6·9	59·1	—	—	38·7	8·0
16·7	—	—	—	8·8	54·4	16·3	—	—	—	3·8	44·4	19·3	—	0·03	80·4	51·0
5·1	—	0·28	—	2·3	46·0	4·7	—	0·53	—	1·8	71·1	6·9	—	0·20	26·8	47·5
21·9	—	0·28	—	11·1	52·4	21·1	—	0·53	—	5·5	50·4	26·2	—	0·23	107·2	50·1
18·2	0·56	0·56	—	5·2	29·6	12·7	—	—	—	0·9	13·7	26·1	0·27	0·03	41·1	19·3
266·2	1·99	21·28	3·41	64·2	24·9	121·8	1·58	14·77	3·17	13·0	20·6	166·7	0·74	10·38	265·7	19·5
927·7	2·84	32·07	4·26	152·6	17·0	454·6	2·64	20·04	3·17	36·2	15·3	411·5	1·27	12·49	586·6	17·5
8·8	3·41	0·28	—	1·9	22·6	9·5	2·64	0·53	—	0·4	7·9	6·4	1·68	—	7·3	14·0
67·5	1·42	1·70	—	14·7	22·6	38·0	1·58	0·53	—	3·7	18·5	55·9	0·94	0·23	90·0	19·7
76·3	4·82	1·99	—	16·6	22·6	47·5	4·22	1·06	—	4·0	16·4	62·2	2·62	0·23	97·3	19·2
1004·0	7·66	34·05	4·26	169·2	17·4	502·1	6·86	21·09	3·17	40·3	15·4	473·8	3·90	12·73	684 0	17·7

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CHAPTER II.—THE HEALTH OF THE ROYAL AIR FORCE IN THE UNITED KINGDOM DURING 1923.

General.

1. Table I, page 2, gives details of total sickness in the United Kingdom. The corresponding figures and ratios for the years 1921 and 1922 are inserted for comparison. Compared with previous years, the average duration of each case, the average number of days sickness per head, the ratio of invalids from the Service and number sick daily, all show a decrease. The admission rate, 48-hours cases included, shows an increase on previous years; excluding 48-hours cases, a progressive decrease is noticed. The death rate shows a fractional increase from 2·5 in 1922 to 2·7 in 1923. Further figures show that the increase in the admission rate mentioned above was most marked in the spring and autumn months. In this connection it is of interest to note that 1923 was the wettest year since 1916, characterised by low temperatures in May and November, a hot period in July, and the absence of easterly and prevalence of westerly winds during the autumn. The majority of the 48-hours cases were due to common colds, slight pharyngitis and nasopharyngitis.

2. Chart I, facing page 2, shows the monthly case incidence of sickness in ratios per 1,000 of strength in the United Kingdom during 1921, 1922 and 1923. The feature of the chart is the similarity of the graph during the three years. The increase in sickness during the spring months, to which reference has already been made, is also noticeable.

3. Table XI, page 35, shows details of sickness at the principal stations in the United Kingdom; only stations whose average strength is 500 or over are shown. The relatively high admission rates at Cranwell, compared with other stations, is due to the inclusion of boys under training at this station, many admissions being for trivial ailments, which would not occur among men. It will be noticed that the increase in the admission rate, 48-hours cases included, to which reference has already been made, was general throughout the force at home, Flowerdown and Henlow being the only stations where a decrease has been recorded.

Diseases calling for Special Mention.

4. The case incidence of scabies has fallen from 8·4 per 1,000 of strength in 1922 to 7·3 in 1923. At the same time the average duration of each case has been reduced from 11·5 to 9·5 days. Attention was directed in previous reports to the prolonged duration; the reduction of two days on each case

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Table XI.—Sickness at Principal Stations at Home, 1922 and 1923.

Station.		Average Strength.	Ratios per 1,000 of strength.		
			Cases of sickness.		Deaths.
			Including 48-hours cases.	Excluding 48-hours cases.	
Cranwell - - -	1923	2,226	1,120·9	502·7	0·9
	1922	*2,283*	*903·6*	*440·2*	*2·6*
Flowerdown - - -	1923	655	435·1	294·7	1·5
	1922	*823*	*599·0*	*390·0*	*1·2*
Gosport - - - -	1923	534	745·3	217·2	3·7
	1922	*457*	*509·8*	*308·5*	—
Grain, Isle of - - -	1923	557	1,055·7	366·2	3·6
	1922	*605*	*882·6*	*400·0*	*3·3*
Halton - - - -	1923	3,111	932·2	402·4	1·9
	1922	*3,214*	*489·4*	*393·0*	*1·2*
Henlow - - - -	1923	1,128	592·2	422·9	3·5
	1922	*1,122*	*759·4*	*492·9*	*1·8*
Manston - - -	1923	1,476	1,046·1	420·7	0·7
	1922	*1,526*	*733·9*	*494·1*	*3·9*
Shotwick - - -	1923	500	492·0	220·0	6·0
	1922	*539*	*486·1*	*302·4*	*9·3*
Uxbridge - - -	1923	3,454	1,559·9	310·4	1·7
	1922	*2,623*	*1,081·5*	*370·4*	*1·5*
All other Stations at home	1923	6,598	790·0	304·2	4·1
	1922	*7,882*	*761·4*	*336·5*	*2·9*
Total at home - -	1923	20,239	974·5	354·3	2·7
	1922	*21,074*	*757·6*	*382·5*	*2·5*

is an improvement, although it is considered that a further reduction could still be effected. Impetigo contagiosa shows an increase in the case rate from 12·1 in 1922 to 15·3 in 1923. Further reference is made to this disease in the hygiene section on page 61. The seven cases of dysentery shown in the nosological tables, pages 18 and 32 under the United Kingdom heading, were all of the recurrent amœbic type and occurred amongst personnel who had served overseas. The case incidence of influenza was 16·0 per 1,000 of strength as compared with 50·9 in 1922, the average duration of each case being practically

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identical during both years. It should be remembered that in 1922 an epidemic of a mild type occurred in the United Kingdom. With the exception of boys at Cranwell the cases were mostly sporadic during 1923. Further details of this disease will be found on page 61. Fifty-nine cases of recurrent malaria were reported at home, representing a case incidence rate of 2·9 per 1,000 of strength, compared with 3·3 in 1922. Details of the types are shown in Table X, page 32. Scarlet fever accounted for 28 cases and mumps for 60 cases; both diseases occurred chiefly among boys at Halton and Cranwell. Tonsillitis gave a case incidence rate of 16·2 per 1,000 of strength, compared with 24·3 in 1922. Reference is made to the single case of enteric fever on page 61.

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CHAPTER III.—THE HEALTH OF THE ROYAL AIR FORCE ABROAD.

General.

1. Details of sickness in each of the geographical areas abroad, as well as for the force abroad as a whole, are given in Table I, page 2. The corresponding figures and ratios for the years 1921 and 1922 are inserted for comparison.

2. Compared with previous years, the admission rate for the force abroad, the death rate, the average number of days' sickness for each individual, the ratio of the number sick daily and invalids from the service are the lowest figures so far reached. The average duration of each case shows an increase compared with the figures for 1922; including 48-hours cases, the increase is half a day; excluding these, one day.

3. Chart I, facing page 2, shows the monthly case incidence of sickness in ratios per thousand of strength for the force abroad during 1921, 1922 and 1923. Chart III, facing page 38, further analyses sickness abroad and shows the monthly case incidence rates in the Mediterranean Littoral, Iraq and India during the same period. Features of the chart are

(i) the improvement in India since 1921,

(ii) the peaks in the Iraq graph, which occur each year during the summer months and which are almost entirely due to sandfly fever and

(iii) the similarity of the Mediterranean Littoral curve during each of the three years.

4. Table XII, page 38, shows sickness at the principal stations abroad, where strengths justify insertion. Figures for 1922 are also shown for comparison. The high incidence rate at Basrah was due to malaria and to temporary indisposition caused by preventive inoculation for cholera and plague; the latter cases were of short duration. Only stations whose average strength exceeded 500 are included in the table.

5. A further analysis of sickness in the larger stations abroad is given in Table XIII, page 40. This table shows under separate headings, for each of the stations mentioned, the number of cases of dysentery, malaria and sandfly fever, as compared with the total of all other cases. The percentage of the total due to each disease is also given. It will be seen that, in Iraq and India and to a lesser extent in Egypt, these diseases accounted for a large proportion of the total sickness recorded. In fact, the relative degree of healthiness of any station, as shown by the table, is determined by the prevalence of one or more of these diseases.

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TABLE XII.—SICKNESS AT PRINCIPAL STATIONS ABROAD, 1923 AND 1922.

Station.		Average Strength.	Ratios per 1,000 of strength.		
			Cases of sickness.		Deaths.
			Including 48-hour cases.	Excluding 48-hour cases.	
Abbassia, Cairo and Heliopolis	1923	758	971·0	472·3	10·6
	1922	*927*	*1,749·7*	*926·6*	*4·3*
Aboukir	1923	602	789·0	486·7	3·3
	1922	*708*	*755·7*	*382·8*	*2·8*
Baghdad	1923	484	1,696·3	871·9	6·2
	1922	*1,022*	*4,688·8*	*1,471·6*	*16·6*
*Basrah (including Makina and Magil)	1923	542	4,173·4	1,464·9	3·7
Hinaidi	1923	1,738	1,889·5	858·5	8·1
	1922	*815*	*1,857·7*	*1,162·0*	*19·6*
*Mosul	1923	511	1,473·6	1,140·9	13·7
Karachi	1923	626	1,091·0	279·5	3·2
	1922	*465*	*1,967·7*	*655·9*	*2·2*

* The strengths of these stations in 1922 were not sufficiently large to justify comparison with the ratios for 1923.

Diseases calling for Special Mention.

6. *Sandfly fever.*—Table XIV, page 41, shows the monthly case incidence of sandfly fever in each of the geographical areas abroad. The corresponding monthly ratios for 1922 are inserted for comparison. The case incidence rate for the force abroad has fallen from 230·6 per 1,000 of strength in 1922 to 156·1 in 1923. With the exception of Malta, each individual area shows a reduction compared with the previous year. The increase at Malta amounted to 17·5 per 1,000 of strength. The disease reached its maximum point in Malta in September, whereas the highest figures for 1922 occurred in June. Comparing the two years, it will be noticed that in both years Iraq returned the highest case rate, being 301·6 in 1923 compared with 565·3 in 1922. In both years India returns the lowest figures of all commands. Table XV, page 42, shows the case incidence at stations in each geographical command during 1923. From the table it will be seen that the greatest number of cases at any station in the Mediterranean Littoral occurred at Ramleh,

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Chart III.- MONTHLY CASE INCIDENCE OF SICKNESS IN RATIOS PER 1000 OF STRENGTH FOR GEOGRAPHICAL AREAS ABROAD IN 1923, 1922 AND 1921.

(CASES OF 48 HOURS DURATION ARE NOT INCLUDED.)

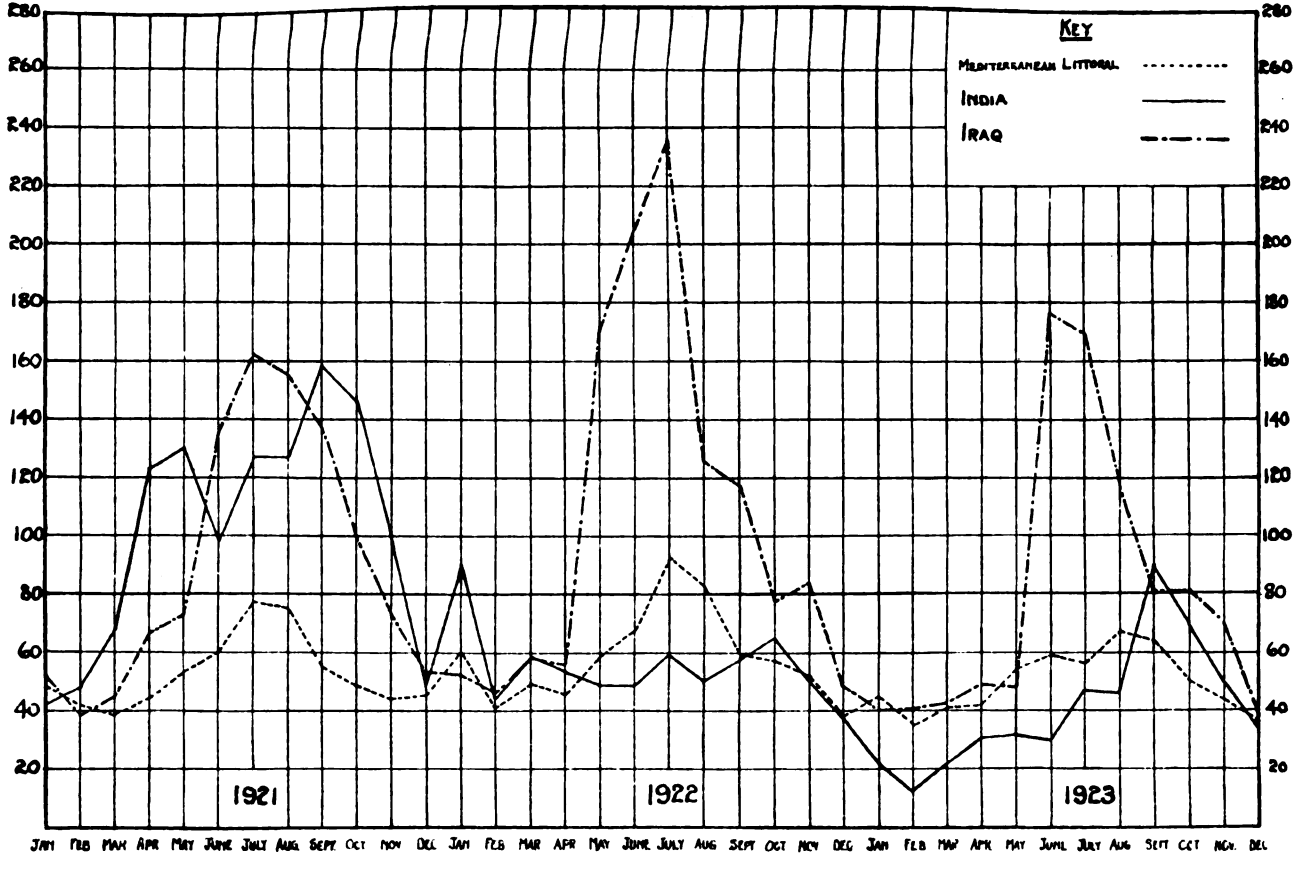

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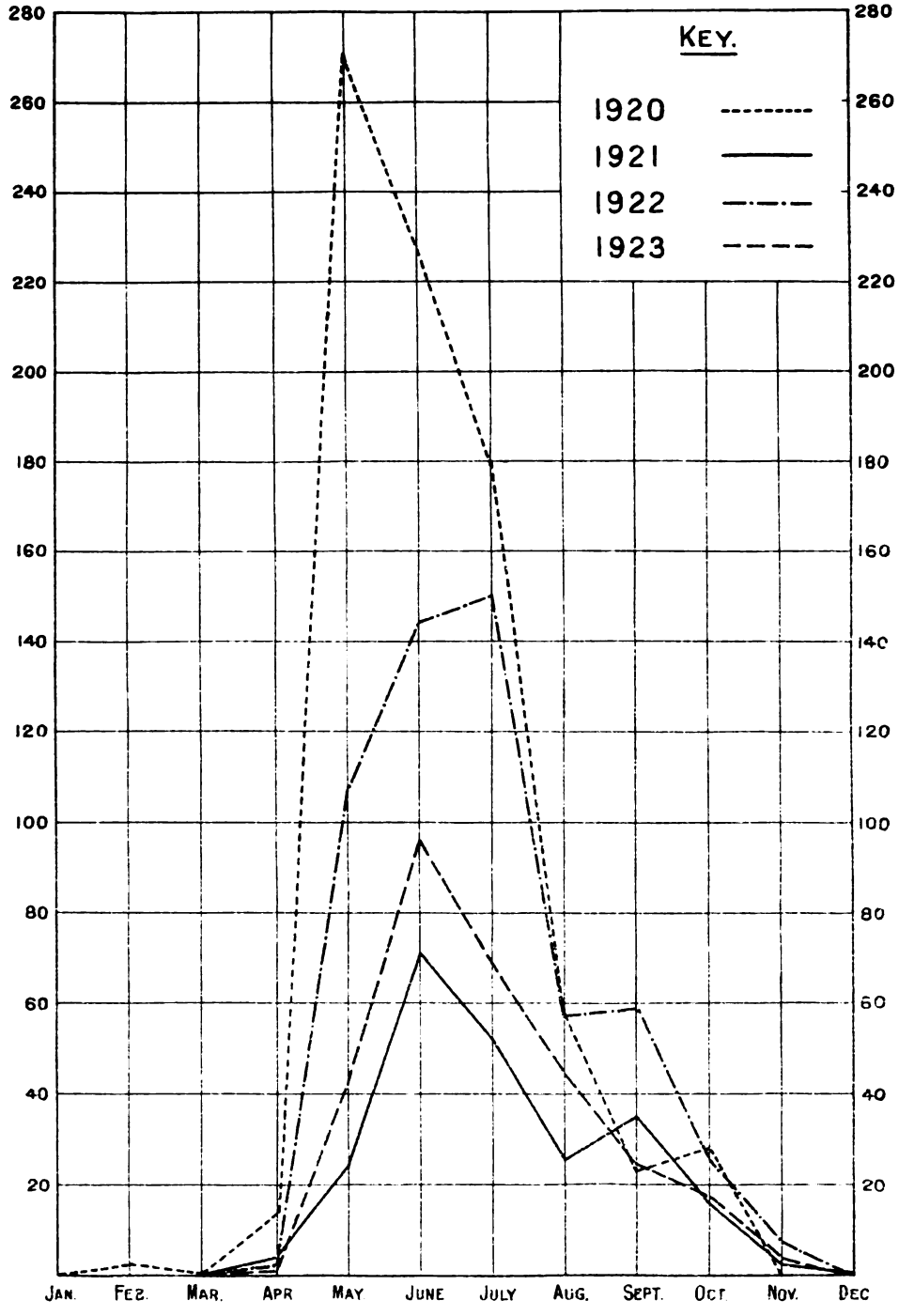
Chart IV.– Monthly case incidence of Sandfly Fever in Iraq, in ratios per thousand of strength during 1920, 1921, 1922 and 1923.



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followed by Malta with 50 cases. In Iraq, Hinaidi recorded the highest figure with 640 cases, Mosul being next with 261. In India the greatest number of cases occurred at Karachi (19). Chart IV, facing page 39, shows the monthly case incidence of sandfly fever in ratios per 1,000 of strength in Iraq during 1920, 1921, 1922 and 1923. It will be noticed that the point of maximum intensity of the disease varies from May to July. The Principal Medical Officer of the Iraq command makes the following comment :—" In comparing the 1922 and 1923 epidemics it was noticed that the start was earlier and of much greater extent than in 1923. As this was presumably due to the earlier hatching out of the sandfly, minimum temperatures during April in the two years were compared. It was found that the average minimum temperature throughout the whole of April 1922 was approximately in the region of 65 degrees, almost 10 degrees higher than that of 1923. This also applies to the last fortnight in March. This suggests that a minimum temperature above the normal towards the end of March and the beginning of April denotes an early commencement of the sandfly fever epidemic." It was also noticed that " the outbreak at Mosul started a month later than in Baghdad (Hinaidi). The minimum temperatures at Mosul commenced to stay constantly above 60 degrees from May 22nd onwards. Fourteen days later the outbreak started there. In Baghdad the minimum temperature reached 60 degrees on April 27th for the first time and after that remained in the region of 65 degrees or higher. Fourteen days after the minimum temperature first exceeded 65 degrees the first appreciable number of cases occurred, namely on May 9th and 10th and the epidemic really started from this date." It will be remembered that in the health report for 1922 the Sandfly Fever Commission at Malta found that the minimum atmospheric temperature at which the flies hatched out varied between 69 and 75 degrees Fahrenheit. The number of cases at Basrah during the year was almost negligible. At Mosul the disease was particularly severe. This was attributed to a certain extent to the fact that it was not possible to carry out the prophylactic measures so thoroughly at Mosul as at other stations. It is difficult to estimate how far the reduction shown was due to prophylactic measures, as the disease appears to vary in severity from year to year. Factors which may influence the yearly case incidence are accuracy of diagnosis, acclimatisation and possibly acquired immunity, about which little is at present known.

7. *Malaria.*—Table XVI, page 44, shows the monthly case incidence of malaria in each of the geographical areas abroad during 1923. Primary cases are shown separately from all other cases. The case rate for the force abroad has increased to 107·5 per 1,000 of strength from 73·6 in 1922; the primary rate at the same time has almost doubled, being 60·3, as compared with 30·6 in 1922. In the individual areas the Mediterranean Littoral shows an increase in the total case rate from 24·7 in

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Table No. XIII.—Analysis of Sickness at Principal Stations Abroad during 1923

(48-hour cases excluded).

Station.	Average Strength.	Number of cases.						Percentage of total number of cases at station.					Case incidence per 1,000 of strength of cases other than Dysentery, Sandfly and Malaria.
		Dysentery.	Sandfly.	Malaria.	Total Dysentery, Sandfly and Malaria.	All other cases.	Total all cases.	Dysentery.	Sandfly.	Malaria.	Total Dysentery, Sandfly and Malaria.	All other cases.	
Abbassia, Cairo and Heliopolis - -	758	8	43	7	58	300	358	2%	12%	2%	16%	84%	395·8
Aboukir - - -	602	15	14	5	34	259	293	5%	5%	2%	12%	88%	430·2
Baghdad - - -	484	12	86	14	112	310	422	3%	20%	3%	26%	74%	640·5
Basrah, Magil, and Makina - - -	542	7	39	448	494	300	794	1%	5%	56%	62%	38%	553·5
Hinaidi - - -	1,738	55	640	25	720	772	1,492	4%	43%	2%	49%	51%	444·2
Mosul - - -	511	25	261	32	318	265	583	4%	45%	6%	55%	45%	518·6
Karachi - - -	626	5	19	79	103	72	175	3%	11%	45%	59%	41%	115·0

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Table XIV.—Monthly Case Incidence of Sandfly Fever Abroad, 1923.

Month.	Malta (and Ships).			Egypt and Palestine.			Iraq.			India.		
	No. of cases, 1923.	Ratio per 1,000.		No. of cases, 1923.	Ratio per 1,000.		No. of cases, 1923.	Ratio per 1,000.		No. of cases, 1923.	Ratio per 1,000.	
		1923.	1922.		1923.	1922.		1923.	1922.		1923.	1922.
January	—	—	—	1	0·4	—	—	—	—	1	0·6	0·6
February	—	—	—	—	—	—	—	—	—	—	—	0·6
March	—	—	—	5	1·7	—	1	0·3	—	1	0·5	3·1
April	—	—	—	11	4·0	0·7	9	2·6	3·1	6	3·1	9·3
May	3	8·1	—	48	17·8	17·7	151	43·1	107·3	12	6·1	13·5
June	9	25·6	61·1	48	17·3	13·9	343	96·9	145·8	1	0·5	4·6
July	8	21·8	37·8	23	8·5	26·5	243	69·7	150·0	10	5·1	4·0
August	10	28·2	4·3	60	22·3	24·4	157	45·2	57·6	7	3·6	2·3
September	13	36·3	6·6	50	17·9	16·2	84	24·1	59·2	4	2·1	7·5
October	9	25·4	6·9	20	7·1	14·2	64	17·7	26·2	3	1·5	2·9
November	—	—	2·5	4	1·4	3·6	11	3·0	6·0	4	2·1	0·6
December	—	—	—	1	0·4	—	—	—	—	—	—	0·6
Total	52	137·2	119·7	271	97·6	117·8	1,063	301·6	565·3	49	25·8	50·5

Note.—(i) In addition there were 48 cases at Constantinople in 1923: 1 in May, 5 in June, 24 in July, 13 in August, 5 in September.
(ii) One case occurred in March 1922, and 5 in April 1922, amongst drafts en route.
(iii) Five cases occurred amongst drafts en route in October 1923.
(iv) Case incidence rate per 1,000 of strength abroad:—1923, 156·1; 1922, 230·6; 1921, 122·9.

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Table XV.—Case Incidence of Sandfly Fever at Stations Abroad, 1923.

Mediterranean Littoral.			Iraq.			India.		
Station.	Average strength.	No. of cases.	Station.	Average strength.	No. of cases.	Station.	Average strength.	No. of cases.
Abbassia, Cairo and Heliopolis	758	43	Baghdad	484	86	Ambala	146	3
Aboukir	602	14	Basrah, Magil, Makina	542	39	Dardoni	181	10
Abu Sueir	405	6	Hinaidi	1,738	640	Karachi	626	19
Amman	114	—	Kirkuk and Kingerban	82	22	Lahore	138	—
Bir Salem	79	8	Mosul	511	261	Lower Barian	150	—
Constantinople	100	29	Shaibah	154	7	Peshawar	158	4
Helouan	154	5	Other stations (*a*)	13	8	Quetta	173	1
Jerusalem	141	—				Risalpur	250	7
Kelia	135	8				Other stations (*a*)	74	5
Ludd	191	45						
Malta	280	50						
Moascar	63	8						
Ramleh	170	77						
San Stefano	375	11						
Other stations (*a*) (*b*)	545	72						
Total	4,112	376	Total	3,524	1,063	Total	1,896	49

(*a*) "Other stations" includes all stations with an average strength of 50 or less.
(*b*) Includes drafts en route.

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1922 to 26·5, the primary rate increasing from 8·3 to 16·8. A large increase has taken place in Iraq; both the total case rate and primary rate are more than double those for the previous year. An increase in both primary and total case rates has also occurred in India, the former being 106·5 and the latter 202·0, compared with 68·7 and 196·1 respectively in 1922. Table XVII, page 45, shows the case incidence at stations in each geographical area abroad during 1923. In the Mediterranean Littoral, 20 cases, of which 16 were primary, occurred amongst the R.A.F. personnel of the Constantinople force. The personnel of this force was mostly drawn from the United Kingdom and many men were consequently exposed to the risk of infection for the first time. In addition, this force was serving under active service conditions. In Iraq the greatest number of cases was recorded in the Basrah district. No less than 448 from a total of 533 cases occurred in this area. This high incidence is primarily due to the unsatisfactory local conditions which render preventive measures (other than personal) against the disease of little avail unless undertaken on a large scale, owing to the impossibility of dealing satisfactorily with many miles of small creeks and numerous pools of seepage water which exist throughout the entire area. The recognised anti-malarial precautions, though instituted in all units, failed to produce the hoped-for results on the case incidence. In India 79 cases, of which 39 were primary, occurred at Karachi; this station in previous years has always returned the highest number of cases in India. A further 73 cases occurred at Ambala and 66 at Lahore. Malaria in India accounted for 40·1 per cent. of the total number of cases of over 48 hours duration, reported during 1923. A vigorous anti-malarial campaign proved unproductive in reducing to any extent the case incidence of the disease, of which the R.A.F. incidence was but a small part of a pan-Indian epidemic.

8. *Dysentery.*—Table XVIII, page 46, shows the monthly case incidence of dysentery in each geographical area abroad, primary cases being shown under separate headings from other cases. During the past three years the total case incidence rate for the force abroad shows a progressive reduction, being 21·5 in 1923, 22·4 in 1922 and 38·5 in 1921, the corresponding primary rates being 15·7, 17·6 and 26·9 respectively. As the incidence of dysentery is regarded as the index of sanitary efficiency amongst units stationed in tropical countries, the figures indicate a progressive improvement in sanitation abroad. The total case rate in each area, with the exception of the Mediterranean Littoral, where, compared with 1922 a slight increase has occurred, shows a progressive decrease. At the same time a reduction in the primary rate in each area has been effected. The case incidence at stations abroad in each of the geographical areas is given in Table XIX. page 48. The table shows the number of cases of clinical, bacillary and protozoal dysentery under separate headings for

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TABLE XVI.—MONTHLY CASE INCIDENCE OF MALARIA ABROAD, 1923.

Month.	Mediterranean Littoral.		Iraq.		India.	
	Primary Cases, No.	All Cases, No.	Primary Cases, No.	All Cases, No.	Primary Cases, No.	All Cases, No.
January	1	8	1	15	2	3
February	1	5	1	6	—	1
March	2	4	—	5	1	5
April	1	7	3	13	8	13
May	2	7	12	19	4	11
June	2	4	57	69	9	16
July	8	12	91	126	15	30
August	11	13	26	55	21	35
September	20	21	26	51	79	119
October	11	13	31	52	42	77
November	10	13	53	99	18	55
December	—	2	3	23	3	18
Total	69	109	304	533	202	383
Case Ratios per 1,000 per annum.						
1923	16·8	26·5	86·3	151·2	106·5	202·0
1922	*8·3*	*24·7*	*38·6*	*63·4*	*68·7*	*196·1*
1921	*5·7*	*23·3*	*11·7*	*78·8*	*174·1*	*337·6*

Case ratios per 1,000 of strength abroad :—1923, 107·5; *1922, 73·6 1921, 122·9.*

each of the stations mentioned. In addition, a distinction is made betwen primary and all other cases. In the Mediterranean Littoral the greatest number of cases, as in previous years, has occurred at Aboukir. Mention of the conditions at this station has been made in previous reports, and it is satisfactory to note that the incidence shows a steady reduction. The prevailing type in the Mediterranean Littoral, as in previous years, was bacillary and the comparatively few recurrences among the clinical cases in this area is suggestive that many of them were probably also bacillary in origin. The amœbic type predominated in Iraq, only 3 cases of a total of 108 being bacillary. The greatest number of cases occurred in the Baghdad district, 55 being reported from Hinaidi and 12 from Baghdad. A total of 25 cases was recorded at Mosul. Further reference to dysentery in this command is made on page 64.

In India a total of 34 cases was reported, only one of which was stated to have been of the bacillary type. Twelve cases occurred at Quetta, the remainder being scattered more or less uniformly amongst other stations.

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Table XVII.—Case Incidence of Malaria at Stations Abroad, 1923.

Mediterranean Littoral.				Iraq.				India.			
Station.	Average strength.	Cases.		Station.	Average strength.	Cases.		Station.	Average strength.	Cases.	
		Primary.	All.			Primary.	All.			Primary.	All.
		No.	No.			No.	No.			No.	No.
Abbassia, Cairo and Heliopolis	758	3	7	Baghdad - -	484	2	14	Ambala - -	146	38	73
Aboukir - -	602	5	5	Basrah, Magil and Makina -	542	266	448	Dardoni - -	181	13	36
Abu Sueir -	405	1	6	Hinaidi - -	1,738	13	25	Karachi - -	626	39	79
Amman - -	114	1	4	Kirkuk and Kingerban -	82	5	6	Lahore - -	138	34	66
Bir Salem -	79	3	4	Mosul - -	511	13	32	Lower Barian -	150	7	14
Constantinople -	100	2	5	Shaibah - -	154	5	8	Peshawar -	158	19	45
Helouan - -	154	—	2	Other Stations(*a*)	13	—	—	Quetta - -	173	12	14
Jerusalem -	141	2	3					Risalpur - -	250	31	40
Kelia - -	135	—	—					Other Stations(*a*)	74	9	16
Ludd - -	191	8	9								
Malta - -	280	—	1								
Moascar - -	63	2	3								
Ramleh - -	170	4	14								
San Stefano -	375	14	15								
Other Stations (*a*) (*b*) - -	545	24	31								
Total - -	4,112	69	109		3,524	304	533		1,896	202	383

Note.—(*a*) "Other stations" includes all stations with an average strength of 50 or less. (*b*) Includes drafts en route.

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TABLE XVIII.—MONTHLY CASE INCIDENCE OF DYSENTERY ABROAD, 1923.

Month.	Mediterranean Littoral.		Iraq.		India.	
	Primary cases. No.	All cases. No.	Primary cases. No.	All cases. No.	Primary cases. No.	All cases. No.
January	1	3	2	4	—	2
February	2	2	—	—	1	3
March	1	2	1	1	1	2
April	3	5	3	4	1	2
May	11	13	8	11	—	—
June	4	5	16	20	—	3
July	6	7	7	10	4	6
August	8	9	11	12	5	6
September	5	6	10	11	1	4
October	3	6	9	13	2	4
November	2	3	12	14	—	1
December	1	2	8	8	1	1
Total	47	63	87	108	16	34
Case ratio per 1,000 per annum:—						
1923	11·4	15·3	24·7	30·6	8·4	17·9
1922	*12·5*	*14·6*	*27·3*	*35·3*	*15·3*	*21·7*
1921	*14·8*	*17·5*	*60·8*	*78·8*	*25·0*	*48·4*

Total strength abroad case incidence per 1,000:—1923, 21·5; *1922, 22·4; 1921, 38·5.*

9. *Enteric Group.*—A total of 20 cases of typhoid fever, resulting in 3 deaths, was reported during the year. Of the 20 cases, 2 occurred in the Mediterranean Littoral. These cases were sporadic; both were stated to be fully protected by prophylactic inoculation. In Iraq, 14 sporadic cases of isolated origin were recorded. Ten of the cases occurred at Hinaidi, 3 at Mosul and one at Makinah. Of the total, 11 were stated to have been fully, and one partially, protected by previous inoculation; one had never been inoculated and details were lacking in the remaining case. In India, 4 cases were reported, 2 at Karachi, and single cases at Quetta and Peshawar. One was fully protected by inoculation; details of inoculation were not stated in the 3 remaining cases. Six cases of paratyphoid A occurred abroad during 1923. Two of these were reported in the Mediterranean Littoral, one from Aden and one from Abu-Sueir. In Iraq 4 cases occurred at Hinaidi. Of the total of six, 4 were fully and one partially protected by inoculation. No details were given in the remaining case. A total of 7 cases

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of paratyphoid B was recorded. Of these, 2 occurred in Egypt and one in Palestine. In Iraq, 3 cases were reported from Hinaidi. The remaining case occurred in India. Of the total, 3 had received prophylactic inoculation; details were lacking in the 4 remaining cases. There appeared to be no common origin in any of these cases.

10. *Smallpox.*—The four cases recorded all occurred in Iraq, 3 in the Baghdad area and one in the Basrah district. Two had been recently vaccinated; details of vaccination were not given in the 2 remaining cases.

11. *Heatstroke, Sunstroke and Heat Exhaustion.*—There were three cases of heatstroke, resulting in one death; two of the cases occurred in Iraq, the remaining case in Transjordania. In addition, 43 cases of Heat Exhaustion were reported from abroad; of these, 27 occurred in the Mediterranean Littoral, 11 in Iraq, and 5 in India. There were no deaths and no resultant invalids.

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TABLE XIX.—CASE INCIDENCE OF DYSENTERY AT STATIONS ABROAD, 1923.

Station.	Average strength.	Clinical.		Bacillary.		Protozoal.		Total.	
		Primary cases.	All cases.	Primary cases.	All cases.	Primary cases.	All cases.	Primary cases.	All cases.
		No.	No.	No.	No.	No.	No.	No.	No.
MEDITERRANEAN LITTORAL.									
Abbassia, Cairo and Heliopolis	758	2	3	5	5	–	–	7	8
Aboukir	602	10	11	–	–	4	4	14	15
Abu Sueir	405	3	5	1	1	–	–	4	6
Amman	114	–	–	–	–	1	1	1	1
Bir Salem	79	–	–	–	–	–	–	–	–
Constantinople	100	1	1	1	1	–	–	2	2
Helouan	154	3	3	–	–	–	–	3	3
Jerusalem	141	–	–	1	1	1	2	2	3
Kelia	135	1	1	–	–	–	–	1	1
Ludd and Surafend	191	1	1	1	2	1	3	3	6
Malta	280	1	2	1	1	–	1	2	4
Moascar	63	–	1	–	–	–	–	–	1
Ramleh	170	1	4	–	2	–	–	1	6
San Stephano	375	2	2	2	2	–	–	4	4
Other stations (*a*) (*b*)	545	1	1	–	–	2	2	3	3
Totals	4,112	26	35	12	15	9	13	47	63
IRAQ.									
Baghdad	484	2	3	1	1	6	8	9	12
Basrah, Magil and Makina	542	–	–	–	1	4	6	4	7
Hinaidi	1,738	10	11	1	1	37	43	48	55
Kirkuk and Kingerban	82	–	–	–	–	3	3	3	3
Mosul	511	9	10	–	–	11	15	20	25
Shaibah	154	1	1	–	–	1	3	2	4
Other stations (*a*)	13	–	1	–	–	1	1	1	2
Totals	3,524	22	26	2	3	63	79	87	108
INDIA.									
Ambala	146	–	–	–	–	1	2	1	2
Dardoni	181	–	–	–	–	1	2	1	2
Karachi	626	–	1	–	–	–	4	–	5
Lahore	138	–	–	–	–	3	4	3	4
Lower Barian	150	–	–	–	–	–	–	–	–
Peshawar	158	–	–	1	1	–	1	1	2
Quetta	173	1	1	–	–	5	11	6	12
Risalpur	250	2	3	–	–	1	3	3	6
Other stations (*a*)	74	–	–	–	–	1	1	1	1
Totals	1,896	3	5	1	1	12	28	16	34

NOTE.—(*a*) "Other stations" includes all stations with an average strength of 50 or less.

(*b*) Includes drafts en route.

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CHAPTER IV.—MISCELLANEOUS.

The Central Medical Board.

1. The constitution and functions of the Central Medical Board have remained unchanged and are as described in previous reports. During 1923 it became evident that the existing medical classifications were not sufficiently specific and a new system of classification was evolved and brought into general use. As a result, officers are now classified in respect of their medical fitness to perform both aerial and ground duties within the standards laid down, in accordance with the following procedure :—

(i) The letter " A " represents fitness for aerial duties and " B " represents fitness for ground duties.

(ii) Series of numerals qualifying fitness for aerial duties are added as requisite after the letter " A," *viz.* :—

1. .....full flying duties.
2. .....limited flying duties.
3. .....combatant passenger (piloting excluded).
4. .....non-combatant passenger.

(iii) Letters are subsequently added after both " A " and " B " for the purpose of indicating limitations of fitness as follows :—

h .....home service only.
t .....temporarily unfit.
p .....permanently unfit.

For example A_2h B_h indicates " fit for limited flying at home only and fit for ground duties at home only "; ApB indicates " permanently unfit for any form of aerial duty, but fit for ground duties at home or abroad."

2. The total number of examinations carried out by the Central Medical Board during 1923 amounted to 1,684, as compared with 1,088 during 1922. The increase can be ascribed partly to examinations of candidates for the Reserve of Officers, and partly to the increase in the number of candidates for short service commissions due to the expansion of the regular force. Of the total of 1,684 examinations, 820 were for the purpose of assessing physical fitness for flying, both among candidates for commissions in the general duties branch and among serving officers. A further 221 were examinations of sick serving officers to determine their physical fitness for duty in the branches to which they belonged. Examinations of candidates for the Reserve of Officers numbered 361. A further 68 were in respect of candidates for commissions in non-flying branches of the service. An additional 108 were miscellaneous examinations (candidates

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TABLE XX.—SUMMARY SHOWING THE AVERAGE PHYSICAL MEASUREMENTS OF ACCEPTED PILOTS DURING 1923.

Test.	Candidates for cadetships. 1.	Candidates for short service commissions. 2.	N.C.O. candidates. 3.	Serving officers examined for permanent commissions. 4.	Serving officers examined for fitness for flying and extensions of short service commissions. 5.	Totals. 6.
Numbers accepted	79	429	29	26	15	578
Age - - - - - - - - - yrs.	18·2	25·5	22·8	26·4	29·6	24·5
Height standing - - - - - - cms.	174·0	175·8	172·8	178·0	174·4	175·5
Height sitting - - - - - - - ,,	89·7	90·8	90·4	92·3	90·5	90·7
Weight - - - - - - - kgms.	62·1	65·4	62·3	67·9	64·1	64·9
Chest - - - - - - - - cms.	83·7	87·3	85·0	88·6	87·2	86·8
Vital capacity - - - - - - c.cms.	4,943	5,060	4,776	5,083	4,895	5,028
Breath-holding - - - - - secs.	85·4	80·3	71·4	82·1	79·5	80·9
Expiratory force - - - - mm. Hg.	139·9	143·4	134·2	159·8	150·8	143·9
40 mm. Hg. test - - - - - secs.	64·7	63·3	62·4	64·2	65·4	63·5
Systolic pressure - - - - mm. Hg.	128·9	131·1	134·3	123·7	130·1	130·6
Diastolic pressure - - - - ,,	79·4	80·5	81·0	78·3	82·9	80·4
Pulse sitting - - - - - per min.	71·5	73·3	67·4	68·2	67·6	72·4
Pulse s anding - - - - ,,	80·8	81·5	76·4	74·3	77·6	80·7
Pulse after e ercise - - - - ,,	104·6	104·4	101·2	96·9	96·8	103·8
Return to n rmal - - - - - secs.	27·1	27·8	26·9	22·9	26·0	27·4

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for Princess Mary's Royal Air Force Nursing Service are included in this number). The remainder are unclassified and consist chiefly of candidates for the general duties branch who were found temporarily unfit at the time of examination and who failed to present themselves again.

3. Of the 820 candidates examined in respect of flying duties 578 were accepted and 242 rejected. Table XX. shows the average physical standards of the former group and Table XXI. the causes of rejection of the latter. Table XXII. shows the proportion of candidates accepted under the different groups. Compared with 1922, points of interest in Table XX. are :—

(i) A slight general improvement in the physical standards as compared with the corresponding figures for 1922.

(ii) A reduction in the time of return of the exercise pulse to normal rate, accompanied by a decrease in the acceleration due to exercise. It is not possible to say

TABLE XXI.—CAUSES OF REJECTION BY THE CENTRAL MEDICAL BOARD DURING 1923.

Reason for rejection.	Candidates for cadetships.	Candidates for short service commissions.	N.C.O. candidates.	Serving officers examined for permanent commissions in flying branch only. *	Serving officers examined for fitness for flying and extension of short service commissions.	Total.
(1) Vision	12	107	5	—	—	124
(2) Ear, nose, throat and teeth	3	13	—	—	—	16
(3) Medical and surgical	1	15	1	—	1	18
(4) Defective physical efficiency	3	54	3	—	—	60
(5) Combinations of 1, 2, 3 with 4	4	18	2	—	—	24
Totals	23	207	11	—	1	242

* One case deferred for visual defect.

TABLE XXII.—RESULTS OF 820 EXAMINATIONS BY THE CENTRAL MEDICAL BOARD AS TO FITNESS FOR FLYING.

Candidates for	Number accepted.		Number rejected.		Total.		Percentage accepted.	
	1923.	*1922.*	1923.	*1922.*	1923.	*1922.*	1923.	*1922.*
Cadetships	79	*66*	23	*22*	102	*88*	77	*75*
Short service commissions	429	*268*	207	*197*	636	*465*	67	*58*
N.C.O. pilots	29	*56*	11	*34*	40	*90*	72	*62*
Permanent commissions (serving officers only)	26	*49*	—	—	26	*49*	100	*100*
Extension of short service commissions	15	*48*	1	*16*	16	*64*	94	*75*
TOTALS	578	*487*	242	*269*	820	*756*	70	*64*

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whether this is due to variation in technique or to an improved standard of the cardio-vascular system amongst those examined.

(iii) The general uniformity of the results obtained in 1922 and 1923.

As in previous years, defective vision, either alone or in combination with other disabilities, accounts for the majority of rejections; of a total of 242 rejected, defective vision alone accounted for 124. Table XXII. shows that, compared with 1922, there is an increase in the percentage of candidates accepted in each of the various groups during 1923.

4. The total of 221 sick serving officers comprised 114 from the United Kingdom and 107 from abroad. The predominant disabilities amongst the United Kingdom group were injuries, recent and of old standing, 28; ocular defects and disorders, 21; surgical cases, 14; nervous and mental cases, 15; medical cases, 11; cases of debility 7; and pulmonary cases, 4. Of this group, 15 were invalided from the Service under the following headings:—nervous and mental diseases, 9; injuries, 2; medical cases, 2; ocular defects and disorders 1, and pulmonary disease, 1. The overseas group consisted of nervous and mental cases, 29; medical cases, 25, in all of whom a tropical element could be traced; cases of debility, 16, mostly a *sequela* of tropical disease; injuries, 15; ocular defects and disorders, 10, 5 of which were due to or aggravated by residence in the tropics; surgical cases, 10; and pulmonary cases, 2. Of this group, 12 were invalided from the Service, 6 on account of nervous and mental disease, 2 for debility, 2 for ocular defects and disorders, 1 for injury, and 1 medical case.

Medical Officers' School of Instruction and Research Laboratory.

5. During the year 29 medical officers received instruction in the various subjects described in detail in the report for 1922. Research work has been carried out mainly in connection with the relationship of visual and psychological attributes to flying and their interdependence. Psycho-motor responses in relation to flying have also been investigated and a new apparatus was devised for this purpose towards the end of the year. It is hoped that this apparatus may prove useful both in the training of pilots and in the differentiation of candidates likely to have difficulty in acquiring flying skill. Observations of the effect of rotatory movement on the circulatory system, where undue sensitivity to rotation has been suspected or was actually present, have been continued during the year.

Physical Efficiency of Officers of the Royal Air Force.

6. The procedure, as described in previous reports, whereby all officers are medically examined towards the end of the calendar year, was continued during 1923. The results obtained in each examination are recorded on a special statistical record card,

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thus enabling a comparison to be made with the accepted standards and also with the previous results from the same individual. The total strength of officers serving on 31st December 1923, was 3,145. Cards were received in respect of 2,887 examinations. The non-receipt of the balance can be accounted for by a variety of causes, such as breakage of apparatus in localities where replacement is difficult and by the omission of certain officers in hospital, on sick leave, seconded and detached, on half pay and on ordinary leave.

7. Table XXIII. shows the average results of tests capable of numerical expression in respect of 1,946 officers of the general duties branch fit for full flying duties, classified by age groups, at home and abroad. The corresponding figures for 1922 are inserted for comparison and are shown in italics. Comparing the results for the two years the most striking features are :—

(i) The uniformity of the results, indicative of consistency in technique.

(ii) The slight general improvement shown by the averages for the total force, as compared with the corresponding figures for 1922.

TABLE XXIII.—AVERAGE RESULTS OF TESTS OF 1,946 SERVING OFFICERS OF THE GENERAL DUTIES BRANCH, FIT FOR FLYING DUTIES, CLASSIFIED IN AGE GROUPS AT HOME AND ABROAD.

—	Age group.	No. examined.	Age.	Weight.	Time breath held.	Expiratory force.	Fatigue test.	Pulse rate per minute.			Time taken to return to normal.	Systolic pressure.	Pulse pressure.
								Sitting.	Standing.	After exercise.			
	Yrs.	No.	Yrs.	Kgs.	Secs.	mm. Hg.	Secs.				Secs.	mm. Hg.	mm. Hg.
At Home	under 25	406	22·3	66·9	71·2	147·2	56·5	73·5	81·5	100·7	20·7	124·4	44·4
		365	*22·2*	*66·6*	*69·5*	*142·0*	*55·4*	*73·4*	*80·4*	*101·3*	*21·9*	*122·3*	*42·3*
	25–30	564	27·4	68·2	70·0	154·3	55·3	73·8	80·8	100·5	21·1	122·1	42·9
		465	*27·4*	*67·9*	*70·1*	*149·3*	*55·1*	*73·3*	*80·4*	*101·1*	*22·3*	*121·6*	*40·9*
	31 & over	360	34·5	69·3	66·5	145·6	50·6	74·4	81·1	102·4	22·2	122·0	41·5
		351	*35·3*	*69·1*	*64·4*	*144·0*	*50·5*	*73·8*	*80·2*	*103·0*	*22·9*	*122·0*	*41·2*
Total at Home		1,330	27·8	68·1	69·4	149·8	54·4	73·9	81·1	101·1	21·3	122·8	43·0
		1,181	*28·1*	*67·8*	*68·2*	*145·4*	*53·8*	*73·5*	*80·8*	*101·7*	*22·4*	*121·9*	*41·5*
Abroad	under 25	156	22·8	67·7	74·2	145·5	58·1	73·4	81·0	99·7	21·1	121·6	41·6
		178	*22·9*	*67·6*	*67·4*	*137·0*	*51·5*	*74·6*	*81·9*	*103·2*	*22·5*	*121·7*	*40·7*
	25–30	287	27·2	68·7	71·7	147·7	57·4	73·5	81·4	101·0	21·3	123·0	41·6
		294	*27·1*	*68·2*	*70·4*	*136·8*	*53·2*	*71·6*	*79·1*	*100·7*	*23·2*	*121·9*	*40·9*
	31 & over	173	34·4	71·0	67·8	142·9	52·9	73·9	80·5	100·5	21·6	124·5	42·4
		166	*34·4*	*70·1*	*64·9*	*128·6*	*48·9*	*73·7*	*80·9*	*101·2*	*25·6*	*120·1*	*40·4*
Total Abroad		616	28·1	69·1	71·3	145·8	56·3	73·6	81·1	100·5	21·3	123·1	41·8
		638	*27·8*	*68·5*	*68·2*	*134·7*	*51·6*	*73·6*	*80·3*	*101·5*	*23·1*	*121·4*	*40·7*
Total Force		1,946	27·9	68·4	70·0	148·5	55·6	73·8	81·1	100·9	21·3	122·9	42·6
		1,819	*28·0*	*68·1*	*68·2*	*141·7*	*53·0*	*73·3*	*80·3*	*101·7*	*22·6*	*121·7*	*41·2*
Pre-existing standards based on war conditions.					70	110·0	52·0	72·0	84·0	96–108	under 30·0	120·0	40·0

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8. Table XXIV. shows the physical assessment in respect of flying duties of 2,227 officers of the general duties branch. Officers above the rank of wing commander are not included in the table. The corresponding figures for 1922 are also shown. It will be noticed from the table that the percentage of the total found fit for full flying duties has remained unchanged, the figure being 87 per cent. during both years. At home 87 per cent. were found fit for flying both in 1922 and 1923; abroad an increase of 2 per cent. has occurred during 1923.

TABLE XXIV.—PHYSICAL ASSESSMENT IN RESPECT OF FLYING DUTIES OF 2,227 OFFICERS OF THE GENERAL DUTIES BRANCH (NOT ABOVE THE RANK OF WING COMMANDER).

——	Year.	Fit full flying.	Unfit full flying.	Total.	Percentage fit full flying.
At Home	1923	1,330	196	1,526	87
	1922	*1,181*	*173*	*1,354*	*87*
Abroad	1923	616	85	701	88
	1922	*638*	*104*	*742*	*86*
Total	1923	1,946	281	2,227	87
	1922	*1,819*	*277*	*2,096*	*87*

TABLE XXV.—REASONS FOR UNFITNESS (TEMPORARY OR OTHERWISE) FOR FLYING DUTIES OF 281 OFFICERS OF THE GENERAL DUTIES BRANCH NOT ABOVE THE RANK OF WING COMMANDER.

Defect.	At Home.	Abroad.	Total.
Eyes	50	26	76
Ears or teeth	3	3	6
Medical	55	17	72
Surgical	36	12	48
D.P.E.	31	19	50
D.P.E. and eyes	12	4	16
D.P.E. and medical	3	4	7
D.P.E. and surgical	2	—	2
D.P.E. and ears or teeth	—	—	—
No reason stated	4	—	4
Total	196	85	281

9. Table XXV. shows the reasons of unfitness (temporary or otherwise) of the 281 officers shown as unfit for full flying in Table XXIV. As in previous years, ocular defects and disorders constitute the commonest cause of unfitness. The letters D.P.E. stand for "Defective Physical Efficiency," which, either alone or in combination with other disabilities, accounts for 75 cases. The 281 officers shown as unfit for flying duties were all actually

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TABLE XXVI.—AVERAGE RESULTS OF FURTHER TESTS OF OFFICERS OF THE GENERAL DUTIES BRANCH.

Nature of Test.	1921.						1922.						1923.					
	Officers fit for flying duties, 1,584.		Officers unfit for flying duties, 310.		Total, 1,894.		Officers fit for flying duties, 1,819		Officers unfit for flying duties, 277.		Total, 2,096.		Officers fit for flying duties, 1,946.		Officers unfit for flying duties, 281.		Total, 2,227.	
	Numbers.	Percentage.	Numbers,	Percentage.	Numbers,	Percentage.	Numbers,	Percentage.	Numbers,	Percentage.	Numbers,	Percentage.	Numbers,	Percentage.	Numbers,	Percentage.	Numbers,	Percentage.
Tremor.																		
Absent	930	58·7	140	45·2	1,070	56·5	1,152	63·3	139	50·2	1,291	61·6	1,227	63·1	160	56·9	1,387	62·3
Present	654	41·3	170	54·8	824	43·5	667	36·7	138	49·8	805	38·4	719	36·9	121	43·1	840	37·7
Self-balancing.																		
Steady	1,380	87·1	187	60·3	1,567	82·8	1,612	88·7	180	65·0	1,792	85·5	1,809	93·0	226	80·4	2,035	91·4
Unsteady	204	12·9	123	39·7	327	17·2	207	11·3	97	35·0	304	14·5	137	7·0	55	19·6	192	8·6
Knee jerks.																		
Normal	1,249	78·8	228	73·5	1,477	78·0	1,602	88·1	212	76·6	1,814	86·5	1,652	84·9	226	80·4	1,878	84·3
Abnormal	335	21·2	82	26·5	417	22·0	217	11·9	65	23·4	282	13·5	294	15·1	55	19·6	349	15·7
Vision.																		
6/6 both eyes	1,454	91·8	179	57·7	1,633	86·3	1,660	91·2	154	55·6	1,814	86·5	1,824	93·7	178	63·3	2,002	89·9
6/6 and 6/9; 6/9 and 6/9	79	5·0	30	9·7	109	5·7	118	6·5	35	12·6	153	7·3	81	4·2	37	13·2	118	5·3
Over 6/9 in either	51	3·2	101	32·6	152	8·0	41	2·3	88	31·8	129	6·2	41	2·1	66	23·5	107	4·8
Nasopharynx.																		
Normal	1,485	93·8	282	91·0	1,767	93·3	1,713	94·2	257	92·8	1,970	94·0	1,844	94·8	264	94·0	2,108	94·7
Abnormal	99	6·2	28	9·0	127	6·7	106	5·8	20	7·2	126	6·0	102	5·2	17	6·0	119	5·3
Teeth.																		
No treatment required	1,267	80·0	233	75·1	1,500	79·2	1,366	75·1	211	76·2	1,577	75·2	1,462	75·1	213	75·8	1,675	75·2
Treatment required	317	20·0	77	24·9	394	20·8	453	24·9	66	23·8	519	24·8	484	24·9	68	24·2	552	24·8
Pyorrhœa.																		
Absent	1,552	98·0	289	93·2	1,841	97·2	1,788	98·3	261	94·2	2,049	97·8	1,920	98·7	270	96·1	2,190	98·3
Present	32	2·0	21	6·8	53	2·8	31	1·7	16	5·8	47	2·2	26	1·3	11	3·9	37	1·7

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on duty and the majority were fit for ground duties either at home or abroad.

10. Table XXVI. shows the average results of further tests of officers of the general duties branch during 1921, 1922 and 1923. The chief point of interest in the table is the progressive improvement as shown by the figures not only amongst the fit group but also amongst the unfit. Cards were also received in respect of 561 officers of the medical, dental, chaplain, stores and accounting branches and of officers of the general duties branch of rank higher than wing commander. Of these 561 officers, 541 were found fit for ground duties at home and abroad, and 20 fit for ground duties at home only.

Medical Examination of Recruits.

11. The standards of physical fitness required of recruits for the Royal Air Force have been described in previous reports of this series. During 1923 certain alterations were made in the visual standard in respect of boys and in the dental standard for skilled tradesmen.

12. The standard of vision for and method of examination of boys is now as follows :—

(i) The boy is placed with his back to the light and his visual acuity tested by means of test types placed in a good light at a distance from him of six metres (20 feet). Each eye is tested separately.

(ii) If he can read D-12, or better, at the above distance, with each eye without glasses, he is considered " fit."

(iii) If he can read D-6 at the above distance with either eye without glasses, and not less than D-24 with the other eye without glasses and the worse eye be correctable up to D-9 by glasses, he is considered " fit."

(iv) A candidate whose vision, though within these limits, requires him to wear glasses is not necessarily rejected if otherwise fit.

13. The dental standard for skilled tradesmen is now as follows :—

A skilled man, who is otherwise medically fit, will not be rejected on account of the absence of opposing molars, if he is in possession of a well-fitting denture, or dentures that provide for efficient mastication.

14. The necessary medical examination is carried out—

(i) At Royal Air Force Recruiting Depôts, or

(ii) At Royal Air Force Stations, or

(iii) By civilian medical practitioners engaged on a capitation basis in certain of the larger towns in Great Britain.

During the year, Royal Air Force recruiting depôts were situated at London, Birmingham, Newcastle and Bristol and the majority of recruits were examined at these depôts. Where no

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recruiting depôt exists within a reasonable distance, the recruit undergoes a preliminary examination which is performed by a civilian medical practitioner. If the recruit is found "fit," he is instructed to report to the nearest Royal Air Force recruiting depôt, where a more detailed examination is carried out by Royal Air Force Medical officers. This arrangement has, in practice, been found to give good results; furthermore, it enables a considerable economy to be effected, as men who would subsequently be rejected are eliminated at the preliminary examination, and consequently the minimum expenditure in travelling and maintenance is incurred. At the beginning of the year, 23 civilian medical practitioners were employed. As the value of the method became more apparent, the numbers were progressively increased, until in December 1923, a total of 64 civilian medical practitioners were engaged for this purpose.

15. The total number of examinations recorded during the year amounted to 12,092; of these, 4,288 were carried out by civilian medical practitioners, who rejected 1,752 recruits as physically unfit at the preliminary examination. Excluding these

TABLE XXVII.—ACCEPTED RECRUITS, 1923, AND AVERAGES FOR PREVIOUS THREE YEARS.

Average Physical Measurements classified by Age.

Age last birthday.	Total. No.	Height. Ft.	Weight. Lbs.	Chest.		
				Max. Ins.	Min. Ins.	Range. Ins.
14–17 -	1,118	5·41	113·3	32·5	29·7	2·9
	2,392	*5·39*	*110·4*	*32·1*	*29·5*	*2·7*
18 -	1,113	5·57	125·5	35·2	32·3	2·9
	3,761	*5·53*	*124·4*	*34·9*	*32·4*	*2·6*
19 -	659	5·57	127·4	35·4	32·5	2·9
	2,386	*5·53*	*127·0*	*35·2*	*32·7*	*2·6*
20 -	499	5·57	128·9	35·6	32·7	2·9
	1,508	*5·61*	*128·9*	*35·5*	*33·0*	*2·6*
21 -	437	5·58	129·8	35·8	32·9	2·9
	1,064	*5·54*	*130·3*	*35·8*	*33·1*	*2·6*
22 -	320	5·57	130·7	35·9	33·0	2·9
	845	*5·55*	*130·6*	*35·8*	*33·2*	*2·6*
23 -	264	5·56	130·4	35·9	33·1	2·9
	553	*5·55*	*131·9*	*36·0*	*33·4*	*2·6*
24 -	169	5·57	130·2	36·0	33·2	2·9
	446	*5·54*	*131·9*	*36·0*	*33·4*	*2·6*
25 -	139	5·57	132·5	36·3	33·3	3·0
	351	*5·55*	*133·8*	*36·1*	*33·5*	*2·6*
26 -	201	5·57	131·4	36·3	33·5	2·8
	381	*5·54*	*133·7*	*36·3*	*33·8*	*2·6*
27 and over	486	5·58	135·2	36·6	33·7	2·9
	1,177	*5·56*	*138·3*	*36·7*	*34·2*	*2·6*
Total -	5,405	5·54	125·8	35·0	32·2	2·9
	14,864	*5·52*	*125·9*	*35·0*	*32·4*	*2·6*

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1,752, 5,405 of the balance (10,340) were finally accepted and 4,935 rejected as physically unfit. Table XXVII., page 57, shows the average physical measurements of the former group, classified by age. The average for the years 1920, 1921 and 1922 are inserted in italics for comparison. Table XXVIII., page 58, gives the average physical measurements and ages of accepted recruits classified by previous occupation. Figures for the previous three years are also inserted. Table XXIX., page 59, shows the average physical measurements and ages of the same recruits, classified by geographical areas of residence before enlistment. Comparative figures for the previous three years are also shown in this table. These three tables show that the average physical measurements of recruits accepted during 1923 closely approximate to the average of the three previous years. Table XXX., page 59, shows the causes of rejection of those found unfit by R.A.F. medical officers. As in previous years, " loss or decay of many teeth " constituted the chief cause of rejection, 17·8 per cent. of the total rejections during 1923 being due to this cause alone.

Table XXVIII.—Accepted Recruits, 1923, and Averages for previous Three Years.

Average Physical Measurements and Ages classified by Occupation.

Previous occupation.	Total No.	Age.	Height.	Weight.	Chest.		
					Max.	Min.	Range.
		yrs.	ft.	lbs.	ins.	ins.	ins.
Building trades and electricians	500	20·7	5·55	127·0	35·3	32·4	3·0
	1,470	*20·8*	*5·54*	*128·4*	*35·4*	*32·9*	*2·6*
Clerks	805	21·5	5·61	128·8	35·7	32·7	2·9
	1,401	*21·1*	*5·58*	*128·8*	*35·4*	*32·7*	*2·7*
Commercial, public and personal services.	294	21·2	5·55	128·4	35·4	32·5	2·9
	1,184	*21·9*	*5·55*	*129·3*	*35·4*	*32·9*	*2·6*
Metal workers	871	21·8	5·57	129·2	35·5	32·5	3·0
	3,037	*20·3*	*5·53*	*126·7*	*35·2*	*32·7*	*2·6*
Schoolboys	974	15·4	5·41	113·3	32·5	29·7	2·9
	2,024	*15·6*	*5·39*	*110·0*	*32·0*	*29·4*	*2·7*
Transport and communications	581	21·4	5·58	131·3	36·0	33·1	2·9
	1,984	*20·9*	*5·55*	*130·9*	*35·7*	*33·2*	*2·6*
Indoor trades (other than above)	529	21·9	5·55	128·3	35·7	32·9	2·8
	1,376	*21·2*	*5·52*	*128·3*	*35·4*	*32·9*	*2·6*
Outdoor trades (other than above)	804	20·1	5·55	127·4	35·6	32·8	2·8
	1,858	*20·5*	*5·50*	*127·7*	*35·5*	*33·0*	*2·6*
Unstated	47	19·3	5·51	125·1	34·8	32·0	2·8
	530	*21·2*	*5·49*	*127·6*	*35·2*	*32·6*	*2·6*
Total	5,405	20·2	5·54	125·8	35·1	32·2	2·9
	14,864	*20·1*	*5·52*	*125·9*	*35·0*	*32·4*	*2·6*

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Table XXIX.—Accepted Recruits, 1923, and Average for previous Three Years.

Average Physical Measurements and Ages classified by geographical Areas of Residence.

Locality.	No.	Age. Yrs.	Height. Ft.	Weight. Lbs.	Chest. Max. Ins.	Chest. Min. Ins.	Chest. Range. Ins.
London	1,226	21·0	5·56	128·4	35·8	33·0	2·8
	2,665	*20·5*	*5·53*	*127·2*	*35·3*	*32·7*	*2·6*
Scotland	213	20·4	5·49	125·4	35·0	31·9	3·2
	1,305	*20·8*	*5·47*	*127·4*	*35·3*	*32·7*	*2·7*
Ireland, Wales and West of England.	1,050	18·9	5·47	122·3	33·8	31·1	2·8
	2,785	*19·6*	*5·50*	*124·4*	*34·4*	*31·8*	*2·6*
N.E., N.W., and West of England.	771	20·8	5·53	126·3	35·1	31·9	3·2
	2,612	*20·3*	*5·49*	*125·3*	*35·0*	*32·4*	*2·6*
E. and S.E. of England.	1,443	19·8	5·56	125·2	35·1	32·3	2·8
	3,649	*19·8*	*5·54*	*125·7*	*34·8*	*32·3*	*2·5*
Midlands	650	20·4	5·55	128·0	35·0	32·1	3·0
	1,829	*20·3*	*5·53*	*126·1*	*35·3*	*32·7*	*2·6*
Unstated	12	22·3	5·56	123·5	35·7	32·7	3·0
	19	*21·4*	*5·68*	*135·3*	*36·1*	*33·5*	*2·7*
Total	5,405	20·2	5·54	125·8	35·1	32·2	2·9
	14,864	*20·1*	*5·52*	*125·9*	*35·0*	*32·4*	*2·6*

Table XXX.—Causes of Rejection of Recruits found unfit by R.A.F. Medical Officers.

Causes of rejection.	Number rejected.	Percentage of total rejected.
Loss or decay of many teeth	877	17·8
Poor physique	645	13·1
Diseases of heart	543	11·0
Deformities of feet	500	10·1
Defects of vision	456	9·2
Diseases of middle ear (including deafness)	453	9·2
Diseases of lungs	212	4·3
Varix	153	3·1
Varicocele	140	2·8
Albuminuria	128	2·6
Diseases of nervous system	93	1·9
Defects of extremities	76	1·5
Hernia and bubonocele	67	1·3
Dysentery (or history of)	58	1·2
Pyorrhœa	54	1·1
Other causes	480	9·7
Total	4,935	100

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Hygiene and Sanitation.

United Kingdom.

16. The increasing recognition of the value of good sanitation has been reflected in further improvement in sanitary conditions and in the general health of the force at home. Co-operation between the representatives of the various departments concerned in respect of new works, sites, improvements to buildings, &c., has been maintained during the year.

17. *Lectures and Courses.*—The courses for officers and airmen at the Army School of Hygiene, Aldershot, were well attended and 32 officers and 34 airmen obtained pass marks. In addition, 27 airmen attended the longer course of four months' duration, and of these 21 obtained pass marks. Lectures to cadets at Cranwell were continued and examinations showed that a satisfactory standard of knowledge of the principles of hygiene was attained.

18. *Accommodation.*—The stations in occupation during the year remained as stated in previous reports. In addition to the continuance of reconditioning and improvements to existing buildings, the construction of permanent barrack blocks, married quarters for officers and airmen, institutes, sick quarters, offices and technical buildings was commenced at several stations.

19. Ventilation and heating of workshops and conditions under which work was carried out was supervised, and improvements were effected.

20. *Conservancy.*—Water carriage systems, with modern sanitary appliances, are now installed at all stations and consequently no conservancy difficulties were experienced during the year. Sewage analyses were frequently performed and the results obtained were uniformly satisfactory. The disposal of refuse is effected by incineration, particular attention being directed to frequent collection and quick destruction, the essentials of this method of disposal.

21. Recreational facilities have been well organised and are many and varied. Competitions within the unit, in addition to inter-unit competitions, have been encouraged as productive of good unit *morale.*

22. Water supplies have been examined at least once in each station during the year and the results, with few exceptions, have proved satisfactory. Mention was made in previous reports of the supplies at Spittlegate and Manston and these still require chemical treatment.

23. *Food and Cooking.*—Food, whether issued as rations or sold in canteens, has been of good quality and the cooking of high standard. No cases of food poisoning have occurred during the year. A few articles were condemned as unfit and laboratory examinations were necessary in several instances. Alterations

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have been made in the regulations governing hospital rations, permitting greater variety in extra diets. The question of a suitable ration for crews of aeroplanes undertaking long distance flights, especially over desert country, has been investigated and experiments are being carried out to determine the most suitable ration.

24. *General.*—(i) The effects of training on boys demonstrates the value of regular and good meals, graduated physical training, fresh air, combined with education and discipline. The results of routine examinations of boys at Halton show a steady improvement in physique.

(ii) During March a small outbreak of influenza of a mild type occurred at Cranwell. At the same station, during the earlier part of the year, cases of *Tinea cruris*, confirmed bacteriologically, occurred from time to time, the Boys' Wing being chiefly affected. Attempts at prevention did not at first meet with success, but by July the outbreak apparently subsided and the boys proceeded on leave. On their return a routine examination resulted in over 100 cases being discovered. Strict precautions were instituted and the outbreak completely subsided. A very full investigation failed to elicit any definite source of infection. The preventive measures adopted were :—

(*a*) Strict segregation of all suspected cases.

(*b*) Thorough disinfection of all clothing of infected *personnel.*

(*c*) All articles of clothing, once issued to a person, to be for his sole use until again washed and disinfected.

(*d*) Inspection and supervision of all laundry workers and laundry appliances.

(*e*) Disinfection of all appliances in common use, *e.g.*, lavatories, gymnasia, swimming bath, &c.

(iii) Impetigo among boys at Halton showed signs of spreading, but was prevented from becoming serious by strict attention to cleanliness. Steps were also taken to avoid the spread of infection by preventing boys with any suspicion of the disease from boxing and also by the disinfection of all boxing gloves, &c. The incidence of the disease fell rapidly as the result of the precautions taken.

(iv) One case of typhoid fever was reported, which developed on leave three days after leaving the unit. Investigation failed to trace the cause.

(v) Several civil communities were placed " out of bounds " during the year owing to the prevalence of smallpox, and precautions were taken in the recruitment of *personnel* from districts where the disease was notified.

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Middle East.

Egypt.

25. *Accommodation.*—Buildings in this command are still of a semi-permanent type, but provide comfortable and healthy quarters for a sub-tropical climate.

26. *Water Supplies.*—The supply at Aboukir and at Helwan has again been investigated and the former, for the first time for some years, showed improvement as regards potability, although its palatability has not improved, being still very brackish. At Helwan the old municipal source has been discontinued and a new system introduced by the civil authorities, consisting of alum sedimentation and sand filtration, but without chlorination. Bacteriological examinations showed persistent evidence of pollution and a chlorinating plant is being installed for the units concerned.

27. *Conservancy.*—Water carriage systems are installed at Cairo, Abbassia and Heliopolis, incineration being employed at the remaining stations. A system of main drainage, with sedimentation tanks and broad irrigation, has been commenced at Abu-Sueir.

28. *Food and Cooking.*—Rations were of good quality and cooking satisfactory. In a few cases, kitchens, chiefly owing to structural defects, were not satisfactory.

29. *General.*—(1) The Hygiene and Sanitation Committee continued to control and supervise all works affecting the health of the command.

(ii) Communicable disease was not markedly prevalent, and the incidence of sandfly fever is the lowest so far reached in this command, outbreaks being confined to *personnel* housed in low built buildings with mud floors. Several cases of dysentery occurred at Aboukir and were attributed to the prevalence of houseflies from native quarters in the vicinity.

(iii) A severe outbreak of cholera in Iraq necessitated special precautions in Egypt, especially as regards surveillance of passengers crossing by the aerial route from Baghdad to Cairo. Close co-operation between the civil and Service medical authorities enabled elaborate arrangements to be carried out, at the same time reducing restrictions on individuals to the minimum limit consistent with safety.

Palestine.

30. *Accommodation.*—Nissen huts, wooden huts with verandahs, and permanent double storey stone barracks are the types of buildings in use. The condition of the permanent buildings is good, but the huts have required constant care and maintenance work to render them habitable. The hospital situated at Sarafand consists of hutments which are in a bad

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state of repair, and provision of entirely new hutted buildings is under consideration.

31. *Water Supplies.*—The supply at Jerusalem, which was previously unsatisfactory, has been improved. At Amman all water is chlorinated as the supply is drawn from a shallow well, close to a river, and pollution may easily occur.

32. *Conservancy.*—Incineration is the method commonly in use, although water carriage systems are being installed at Ramleh and Amman.

33. *Food and Cooking.*—Food has been sufficient and of good quality. The condition of kitchens is reported as fair.

34. *General.*—Useful anti-malarial work has been performed by trained squads of local labour, supervised by the R.A.F. medical authorities. The dry summer of 1923 had the direct effect of reducing the numbers of mosquitoes, with a consequent reduction in the malarial incidence. During the autumn a considerable number of cases of typhoid fever occurred amongst the local population, but the incidence in the Royal Air Force remained low. No outbreak of disease occurred which calls for special mention.

Malta.

35. Further improvements in the general sanitary conditions have been effected during the year. New buildings, including a canteen and messes, have been constructed.

36. A recommendation of the Sandfly Fever Commission that living quarters should not be situated on the ground floor, has been carried out as far as possible. Further precautionary measures against the sandfly have been vigorously continued.

37. Food, cooking, bathing arrangements and conservancy are satisfactory. The health of the *personnel* has called for no special comment.

Iraq.

38. The following meteorological statistics are given for 1923 :—

———	Basrah Area.	Baghdad Area.	Mosul Area.
Maximum temperature -	119·0° F.	116·8° F.	116·5° F.
Minimum temperature -	31·6° F.	29·8° F.	27·0° F.
Rainfall - - - -	58·6 mm.	56·6 mm.	20·5 mm.

Sanitary sections in these districts have dealt expeditiously, and with the exception of malaria in the Basrah district, successfully with the many problems which have arisen.

39. *Accommodation.*—All living quarters and offices are provided with fans, and buildings are so constructed as to give protection, as far as possible, from extremes of temperature.

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40. *Water Supplies* have continued satisfactory. The average quantity of chlorine added to the water during 1923 was approximately 2 parts per 1,000,000. The actual quantity has been carefully regulated in accordance with frequent bacteriological examinations of samples taken from pumping stations and storage tanks. The total number of bacteriological examinations performed during the year exceeded 5,000; in addition 55 chemical analyses were carried out. The standard aimed at and obtained has been absence of lactose fermenting organisms in 100 cc. of water. Fresh bleach and testing solution is supplied weekly to mobile units whose water supply may be drawn fron shallow wells and streams. Soda water factories were all carefully supervised and frequent examinations have been made to insure a constant standard of purity.

41. *Conservancy.*—The difficulties mentioned in previous reports in the disposal of sullage water have been overcome, to a certain extent, by the general adoption of the system of pumping the contents of sump pits into tanks or lorries and ultimate disposal in the desert outside cantonments.

42. *Food and Cooking.*—Food has been adequate and the quality good. Slightly different scales and items are allowed for the winter and summer periods. Cooking was satisfactory. The keeping qualities of cooked bacon, which was included as an alternative article, were found to be poor. This item has been withdrawn.

43. *General.*—(i) Apart from malaria in the Basrah district and a certain amount of amœbic dysentery in Baghdad, the health of R.A.F. *personnel* has been satisfactory. The special and peculiar conditions in the Basrah district have been referred to in Chapter III., page 43. The Baghdad and Mosul districts are regarded as malaria-free, but primary cases have been recorded in both districts during the year. Investigation showed that the majority of these cases had been previously in a heavily infected district.

(ii) The occurrence of fairly numerous cases of amœbic dysentery in the Baghdad district from May onwards was probably related to a severe outbreak of the disease amongst army troops operating in Kurdistan, the cases being evacuated by air to Hinaidi hospital; but it should also be mentioned that during the year a very systematic search for "carriers" was carried out and such cases were recorded as dysentery.

(iii) A severe outbreak of cholera amongst the native population commenced at Abadan, in Persia, in August and rapidly spread throughout Iraq. The most stringent precautions, consisting of inoculation of all *personnel*, confinement to limited areas, increased supervision of food and water supplies, and close co-operation with the civil authorities, resulted in complete success. No cases occurred amongst R.A.F. *personnel*. An epidemic of plague at Basrah occurred amongst the native population, but no cases were recorded in the Royal Air Force.

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(iv) Sandfly fever was sufficiently prevalent to warrant additional efforts being made towards prevention and the recommendations of the Sandfly Fever Commission, as described in the report for 1922, were carried out as far as practicable. Certain points which were mentioned in last year's report, particularly the relation between calm days and a following outbreak, and high temperature and the highest incidence, were corroborated.

India.

44. Stations occupied during the year have been described in previous reports. Minor work to improve existing conditions has been continued and is carried out by the Royal Engineers; army hygiene officers continued to supervise sanitation of stations and have kept in close touch with the air force medical authorities. The sanitary state was reported as satisfactory. Malaria, dysentery and sandfly fever were the chief causes of sickness.

Vaccination and Inoculation.

45. *Vaccination.*—The procedure described in previous reports has been continued with satisfactory results during 1923. The increasing incidence of smallpox among the civilian population in the United Kingdom rendered frequent scrutiny of medical records necessary to ensure that protection was being adequately maintained. During the year, drafts proceeding to commands abroad totalled 3,045, and all drafts were certified as protected by recent vaccination. Primary and re-vaccinations performed at home amounted to 7,663 cases, representing a ratio of 378·6 per 1,000 of strength, compared with 477·9 in 1922 and 369·4 in 1921. The majority were either recruits or drafts for commands abroad. Abroad, 2,025 vaccinations, of which only 64 were primary, were carried out. Table XXXI., page 66, shows the number and results of vaccinations in each geographical area. The high percentage of failures amongst the re-vaccinations performed abroad is again noticeable, no less than 697 out of 2,025 (66·8 per cent.) resulting in failure. This can be accounted for by the fact that the majority of *personnel* abroad had been vaccinated since joining the Air Force, and a considerable degree of protection consequently still existed. The vaccination state of the total force can be regarded as satisfactory.

46. *Inoculation.*—(i) Prophylactic inoculation against the typhoid and paratyphoid group was confined to *personnel* of drafts proceeding abroad, and few refusals were recorded. Abroad, 1,907 were carried out in the Mediterranean littoral, 888 in Iraq and 1,160 in India. The vaccine used was T.A.B.C., the composition of which has been described in previous reports.

(ii) Cholera vaccine was given in 4,078 instances in Iraq, where a particularly severe outbreak of cholera occurred amongst the native population. The vaccine was also used in a further 175 instances in India.

(iii) Over 1,000 inoculations against plague were carried out in Iraq, mostly in the Basrah district.

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Table XXXI.—Vaccination Results during 1923.

	Primary Vaccinations.							Re-Vaccinations.							Total.		
	1 Vesicle.	2 Vesicles.	3 Vesicles.	4 Vesicles.	Total successful.	Failure.	Total.	1 Vesicle.	2 Vesicles.	3 Vesicles.	4 Vesicles.	Total successful.	Failure.	Total.	Successful.	Failures.	Number vaccinated.
United Kingdom -	18	38	123	903	1,082	37	1,119	190	327	1,013	4,290	5,820	724	6,544	6,902	761	7,663
Malta - - -	—	—	3	—	3	—	3	9	30	107	—	146	20	166	149	20	169
Egypt and Palestine	—	4	3	11	18	10	28	11	23	33	52	119	257	376	137	267	404
Constantinople -	—	—	1	4	5	2	7	32	30	45	29	136	711	847	141	713	854
Iraq - - -	—	—	—	1	1	—	1	—	9	45	7	61	271	332	62	271	333
India - - -	—	13	—	9	22	3	25	26	57	97	6	186	54	240	208	57	265
Total abroad -	—	17	7	25	49	15	64	78	149	327	94	648	1,313	1,961	697	1,328	2,025
Total - - -	18	55	130	928	1,131	52	1,183	268	476	1,340	4,384	6,468	2,037	8,505	7,599	2,089	9,688
Percentage - -	1·5	4·6	11·0	78·4	95·6	4·4	100	3·2	5·6	15·8	51·5	76·0	24·0	100	78·4	21·6	100

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Laboratory Work at Royal Air Force Hospitals.

47. Laboratories are established at R.A.F hospitals as follow:—at home at Finchley and Halton, abroad at Ludd, Hinaidi and Basrah. The Central Laboratory controls and advises the remaining laboratories as far as purely professional work is concerned, and thus helps to direct research in any particular problem which affects the health of the Service. During 1923 the total number of specimens examined in Air Force laboratories amounted to 21,790. Table XXXII., page 67, gives an analysis of the more important work carried out during the year. As far as possible, all vaccines used in the Service, except in India, are made in the Central Laboratory.

Summary of Laboratory Work carried out in R.A.F. Hospitals during 1923.

TABLE XXXII.—SPECIMENS EXAMINED.

Analyses:—

Fæces	12
Gastric	19
Urine	2,991
Water	143
Sewage	6
Food	22

Blood:—

Agglutinations	258
Counts	1,086
Cultures	153
Malaria parasites	4,739
Wassermann tests	942

Cerebro-spinal fluid for:—

Cultures	7
Cell count	6
Meningococcus	1
Syphilis (Noguchi)	3
Tubercle bacillus	1

Discharge for:—

Gonococcus	1,044
Spirochætes	108

Fæces for—

Dysentery	5,698
Enteric group	647
Helminths	103
Cholera	85
Pathological specimens	62
Purulent discharges and septic fluids	346
Peridental smears	29

Sputum:—

General	136
Tubercle bacillus	580

Throat swabs:—

Diphtheria	899
Miscellaneous examinations	1,664

Vaccines:—

Preparation of autogenous	153

Preparations for bulk:—

Influenza	20,000 c.c.
Gonococcus	1,000 c.c.
Staphylococcus	4,000 c.c.
Streptococcus	2,000 c.c.
T.A.B.C.	50,000 c.c.
Cholera	22,000 c.c.
Acne	1,000 c.c.

48. At the Central Laboratory research work in connection with phlebotomus fever was continued during the year. The complete life-cycle of the *phlebotomus* was again worked out and

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the findings of the previous year verified. Various points in connection with the bionomics of the fly were further investigated :

(i) The best food supply and medium for oviposition and development of larva.

(ii) Distribution of the various species of *phlebotomi* in Malta.

(iii) Resistance of the ovum, larva and pupa to moisture and drying.

(iv) The effects of certain moulds on the larvæ.

Ova of *phlebotomus papatasii* were collected in specially prepared sterile pots and were triple-washed to remove any surface contamination. The washed ova were transferred to sterile breeding cages and, ultimately, adult flies hatched out. These flies were allowed to feed on men in England, but they failed to infect any of the volunteers with sandfly fever. The result of these experiments is held to afford proof that the virus of the fever is not inherited by the *phlebotomus*, but that the infection of the fly occurs in its natural breeding grounds, it is thought by means of the larva ingesting the dejecta or dead remains of previously infected insects. Furthermore, these results tend to prove that the fever is not due to the *phlebotomus* injecting into man some altered product of blood-digestion, as has been suggested by Woodcock. Further observations were made on *phlebotomus* prophylaxis on a large scale and the measures suggested by the Royal Air Force Sandfly Fever Commission in 1922 were found to be beneficial.

49. *Oriental Sore.*—When *phlebotomus papatasii* was being bred in the central laboratory under sterile conditions the opportunity was taken to attempt some Leishmania transmission experiments. *Phlebotomi* were fed on two cases of Oriental sore, one of which was non-ulcerated, the other ulcerated. The flies which had fed on these sores were placed in sterile test-tubes and every two hours for twelve hours they were transferred to fresh test tubes. This change of tubes was effected as a precaution against the direct inoculation of infectious material. After 24 hours the insects were allowed to bite non-immunes daily for 16 days in two instances and 17 days in a third case. Sixteen days is a longer tenure of life than the average *phlebotomus* can expect in the natural state, and should be ample time for any necessary developmental stages in the life-cycle of the Leishmania. The atmospheric temperature may have been too low for the development of the parasite in man, except in one case, where the individual proceeded to Iraq. After the lapse of a year the result of the experiments has been negative in every case.

Princess Mary's Royal Air Force Nursing Service.

50. Forty-nine cases of sickness from an average strength of 104 were admitted to hospital during 1923. Of these, 28 occurred abroad and 21 in the United Kingdom. The average duration of each case was 17·1 days. There were no deaths and no invalids

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from the Service. Of the 28 admissions abroad, 11 were due to primary benign tertiary malaria. Ten of the cases occurred at Basrah, the remaining case in Palestine. A further 6 cases were due to sandfly fever. Two admissions for primary amœbic dysentery were reported. Of the admissions reported at home, 6 were due to upper air passage infection, 4 to septic conditions, and 2 to influenza.

Aerial Transport of Sick in Iraq.

51. During April 1923, some 200 cases of diarrhœa and dysentery occurred amongst a column of British troops operating in Northern Kurdistan. The units concerned were on the return march from Rowanduz, and the only available transport consisted of pack animals. In the circumstances, Vickers Vernon Aeroplanes were used to deal with the situation; the aeroplanes were despatched from Baghdad to Kirkuk on 28th April, and the evacuation of cases was commenced from a point near Serkhuma. The selection of suitable or even possible landing grounds in this area was a matter of very considerable difficulty, and pilots had to exercise more than ordinary skill, being further handicapped by altogether unusual atmospheric conditions. The operation was successfully concluded on 2nd May. The first two days were characterised by extremely bad weather, particularly bad for the type of aeroplane in use. The aeroplanes were compelled to climb to at least 5,000 feet so that control could be retained in the crossing of the Adghir Dagh Mountain ridge. Before the effects of the strong air currents over this ridge were recognised an ambulance aeroplane, with both engines running normally, was forced down from 3,000 feet and crashed in inaccessible country. This unavoidable crash was so skilfully managed by the pilot that none of the sick were injured. In actual fact, after the aeroplane had come to rest on the ground one of the patients had to be awakened and told to get out of the aeroplane. Owing to the nature of the *terrain*, there was no possibility of landing other aeroplanes to pick up the patients without running serious risk of damage to both crew and aeroplane. A smaller aeroplane, carrying a Royal Air Force medical officer as passenger, was, however, by skilful piloting, enabled to land close to the crashed aeroplane. A seriously ill patient, who probably would not have survived, was at once evacuated in the second aeroplane. The medical officer remained with the sick and was able to render assistance in the long and difficult journey to Koi, which was accomplished on donkeys and ponies. Altogether, 198 cases, exclusive of medical *personnel*, were evacuated to Kirkuk and thence to Baghdad; the entire journey was completed by air in 128 hours 45 minutes' actual flying time. The mileage covered amounted to 9,615 miles.

52. None of the patients carried seemed to mind the method of transport and the majority stated that they enjoyed the experience. All stood the journey well. Serious cases were evacuated from Kirkuk to Baghdad in the early morning or late

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afternoon in order to lessen the possibility of air sickness, which is apt to occur during the hot period of the day when " bumps " in the air are experienced.

53. In addition to the above, a total of 161 patients was evacuated by air from outlying stations to the Royal Air Force Hospital, Baghdad, during the period 15th May 1923, to 15th July 1924.

Surgical Operations during 1923.

TABLE XXXIII.

Nature of Operation.	Place of Operation.			Totals.
	R.A.F. Sick Quarters.	R.A.F. Hospitals.	Royal Navy, Army and other Hospitals.	
Removal of tumours, cysts and bursæ	9	56	20	85
Evacuation of abscesses	98	241	45	384
Suture of wounds	55	29	16	100
Varices	1	7	7	15
Removal of nails	12	58	9	79
Reduction of fractures and dislocations	58	105	60	223
Wiring or plating fractures	—	12	7	19
Amputations	2	20	10	32
On the eye	6	18	6	30
On joints	1	23	8	32
Removal of tonsils or adenoids	—	62	23	85
For hernia	—	58	14	72
On ear and mastoid process	—	4	3	7
On nose	—	23	31	54
For appendicitis	—	80	47	127
Other abdominal operations	—	13	7	20
For hæmorrhoids	1	47	13	61
Circumcision	4	35	18	57
For hydrocele	—	3	4	7
For varicocele	—	8	3	11
All other operations	7	87	39	133
Total	254	989	390	1,633

Royal Air Force Reserve of Officers.

54. Officers of the Royal Air Force Reserve are drawn from three sources :—

(i) Ex-Royal Air Force officers who were demobilised after the Great War.
(ii) Transfers from the Regular Service.
(iii) Civilian pilots.

Candidates under (i) and (iii) are medically examined on entry by the Central Medical Board, the number of examinations during 1923 being 361.

55. The health of officers during the annual period of training was satisfactory, only 18 cases of sickness being reported. There were three cases of injury due to flying accidents, of which only

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Dental Treatment during 1923.

TABLE XXXIV.

Nature of treatment.	United Kingdom. (Average strength, 20,239.)		Mediterranean Littoral. (Average strength, 4,112.)		India. (Average strength, 1,896.)	Iraq. (Average strength, 3,524.)	Total. (Average strength for the year, 29,771.)	
	By R.A.F. dental surgeons.	By army, naval or civilian dental surgeons.	By R.A.F. dental surgeons.	By army, naval or civilian dental surgeons.	By army, naval or civilian dental surgeons.	By R.A.F. dental surgeons.	By R.A.F. dental surgeons.	By army naval or civilian dental surgeons.
Fillings	14,716	1,070	2,574	177	420	2,175	19,465	1,667
Scalings	1,963	106	170	6	82	531	2,664	194
Extractions	9,073	665	2,885	107	388	2,499	14,457	1,160
Root fillings	1,234	74	276	39	56	337	1,847	169
*Number of dentures supplied.	361 (274)	49 (42)	175 (131)	5 (3)	15 (13)	202 (168)	738 (573)	69 (58)
Number of repairs to dentures.	62	25	32	3	7	141	235	35
Remodels	58	10	44	—	4	68	170	14

* Figures in brackets are the actual number of patients supplied with dentures.

one was serious. Two officers were finally invalided from the Service, the cause in both cases being after-effects of flying accidents.

56. Routine physical examinations of officers, which were periodically performed, showed a satisfactory standard of physical fitness, closely comparable to that of the Regular officer.

Other Cases treated in Royal Air Force Hospitals.

57. In addition to Air Force *personnel*, patients as shown in the table below were treated in Royal Air Force hospitals during the year :—

TABLE XXXV.—PERSONNEL OTHER THAN ROYAL AIR FORCE TREATED IN ROYAL AIR FORCE HOSPITALS.

———	Admissions.	Deaths.	Average constantly sick. No.
IRAQ.			
British army troops	2,608	19	161·3
Indian troops	3,248	15	182·9
Indian followers	2,940	33	160·4
PALESTINE.			
British army troops	124	3	6·0
Indian troops	405	1	29·1
Indian followers	109	5	8·0
British gendarmerie	297	6	16·4

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REPORT

ON THE

HEALTH OF THE ROYAL AIR FORCE

FOR THE YEAR 1924.

The following Report on the Health of the Royal Air Force for the Year 1924 is issued for the information and guidance of all concerned.

By Command of the Air Council,

W. Nicholson

AIR MINISTRY,
Published November, 1925.

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AIR MINISTRY,
KINGSWAY,
LONDON, W.C. 2.

To The Secretary of the Air Council.

SIR,

I HAVE the honour to submit the accompanying report on the Health of the Royal Air Force during 1924.

Compared with previous years, the rates of admission to hospital, invaliding, and number sick daily, and the number of days' sickness per head are the lowest figures so far recorded.

Age distribution tables of the incidence of injury and certain selected diseases amongst airmen are included for the first time in the present report.

The incidence of primary venereal disease, already low, has been still further reduced and the rate, 16·3 per 1,000 of strength, is the lowest so far attained.

Research work on psycho-motor responses in relation to flying and details of the apparatus designed for the purpose are described in Chapter IV.

I have the honour to be, Sir,

Your obedient Servant,

D. MUNRO,

Director of Medical Services,
Royal Air Force.

October, 1925.

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TABLE I.—ANALYSIS OF SICKNESS AT HOME AND ABROAD.

Geographical Area.	Average strength.	Fresh cases of sickness.			Deaths.	Invalided out of service.	Invalided to United Kingdom.	Average duration of each case in days.		Average No. of days sickness per head.		Ratios per 1,000 of strength.				No. sick daily.	
		Less than 48 hours.	More than 48 hours.	Total.				48-hours cases included.	48-hours cases excluded.	48-hours cases included.	48-hours cases excluded.	Fresh cases of sickness. 48-hours cases included.	Fresh cases of sickness. 48-hours cases excluded.	Deaths.	Invalided out of service.	Invalided to United Kingdom.	48-hours cases included.	48-hours cases excluded.
United Kingdom, 1924	22,559	10,766	8,839	19,605	84	240	—	8·2	16·5	7·1	6·5	869·1	391·8	3·7	10·6	—	19·5	17·6
Average for 3 years, 1921/2/3	*21,083*	*10,107*	*7,883*	*17,990*	*64*	*310(a)*	—	*8·9*	*18·7*	*7·6*	*7·0*	*853·2*	*373·9*	*3·1*	*14·7(a)*	—	*20·8*	*19·1*
Mediterranean Littoral, 1924	3,491	2,193	1,722	3,915	15	24	61	9·5	19·7	10·6	9·7	1121·5	493·3	4·3	6·9	17·5	29·1	26·5
Average for 3 years, 1921/2/3	*3,729*	*2,546*	*2,381*	*4,927*	*20*	*22*	*59*	*9·8*	*18·7*	*13·0*	*12·0*	*1321·3*	*638·6*	*5·3*	*5·8*	*15·7*	*35·3*	*32·7*
Iraq, 1924	3,660	2,731	2,874	5,605	27	26	84	11·2	20·6	17·1	16·1	1531·7	785·5	7·4	7·1	23·0	46·8	44·1
Average for 3 years, 1921/2/3	*2,396*	*3,348*	*2,676*	*6,024*	*24*	*14*	*79*	*8·2*	*16·9*	*20·7*	*18·9*	*2514·6*	*1117·1*	*10·2*	*5·7*	*32·8*	*56·5*	*51·5*
India, 1924	1,912	1,888	1,224	3,112	17	10	23	7·6	17·1	12·3	10·9	1627·6	640·2	8·9	5·2	12·0	33·7	29·8
Average for 3 years, 1921/2/3	*1,799*	*3,173*	*1,413*	*4,586*	*16*	*13*	*51*	*6·4*	*17·4*	*16·3*	*13·7*	*2549·0*	*785·4*	*9·1*	*7·2*	*28·5*	*44·5*	*37·3*
Total Abroad, 1924	9,063	6,812	5,820	12,632	59	60	168	9·8	19·6	13·6	12·6	1393·9	642·3	6·5	6·6	18·5	37·2	34·3
Average for 3 years, 1921/2/3	*7,923*	*9,066*	*6,470*	*15,536*	*60*	*48*	*189*	*8·2*	*17·7*	*16·0*	*14·4*	*1960·8*	*816·6*	*7·6*	*6·1*	*23·8*	*43·7*	*39·5*
Total Force, 1924	31,622	17,578	14,659	32,237	143	300	168	8·8	17·7	9·0	8·2	1019·5	463·6	4·5	9·5	18·5(b)	24·6	22·4
Average for 3 years, 1921/2/3	*29,006*	*19,173*	*14,353*	*33,526*	*125*	*359(a)*	*189*	*8·6*	*18·2*	*9·9*	*9·0*	*1155·8*	*494·8*	*4·3*	*12·3(a)*	*23·8(b)*	*27·0*	*24·7*

NOTE.—(*a*) Excludes 711 invalids through Discharge Centre Medical Board during 1921.
(*b*) Calculated on strength abroad.

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CHAPTER I.—THE HEALTH OF THE ROYAL AIR FORCE AS A WHOLE DURING 1924.

General.

1. Detailed figures of the total sickness in the force as a whole are given in table I, page 1. The table is subdivided to show sickness in each of the various geographical areas abroad, in addition to the force abroad considered as a whole.

The average figures for the three-yearly period 1921–1923 are inserted in italics for the purposes of comparison with those for 1924.

2. As has been the practice in former reports, sickness of the R.A.F. personnel of the Inter-Allied Committee of Guarantee is included in the United Kingdom figures. The term Mediterranean Littoral again includes Malta, average strength (512), in which are included R.A.F. personnel of the aircraft carriers in the Mediterranean, Egypt and Palestine (2,754), and drafts *en route* to and from areas abroad (225). Figures shown under the heading "Total Abroad" therefore relate to R.A.F. personnel in the Mediterranean Littoral, Iraq and India.

3. The average strength of the force as a whole was 31,622 and the total number of cases of disease and injury was 32,337, equivalent to a case ratio of 1,019·5 per 1,000 of strength as compared with a corresponding ratio of 1,227·3 during 1923. Excluding cases of 48 hours duration, the case ratio becomes 463·6 per 1,000 compared with 473·8 during 1923. The death rate shows an increase from 3·9 per 1,000 in 1923 to 4·5 in 1924. The final invaliding rate shows a reduction from 12·7 per 1,000 in 1923 to 9·5 during 1924. A slight decrease has been effected in the ratio of the numbers sick daily; including 48 hours cases, the reduction amounted to 1·2 per 1,000 of strength, excluding them, to 0·6 per 1,000. The average duration of each case shows an increase from 7·7 days in 1923 to 8·8 days in 1924, but if 48 hours cases are excluded, the figure remains unchanged, being 17·7 days in both years. The average number of days sickness per head, both including and excluding 48 hours cases, shows a reduction compared with the corresponding figures for 1923.

4. Chart I, facing page 5, shows the monthly case incidence of sickness in ratios per 1,000 of strength for the total force during the four years 1921–1924. Cases of 48 hours duration or less have been excluded from the chart. Features of interest in the graph are—

(i) The lack of similarity in the outlines of the graphs during the first half of each year.

(ii) The peak in March in the graph for 1924, in the production of which influenza and upper air passage infection at home were the chief factors.

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(iii) The reduction in sickness shown by the 1924 graph in the last six months of the year.

(iv) The peak in May, 1924, caused by an increase in sickness abroad.

5. Table II, page 4, shows an analysis of deaths and invalids from the service during 1924. The actual number of cases, deaths and invalids arising from each disease group are shown under separate headings. In addition, the percentage of the total cases, total deaths and total invalids arising from each disease group during 1924 are given under separate headings. Comparative figures over the period 1921-1923 have also been inserted.

6. The incidence of the main disease and injury groups during 1924 is shown in table IV, page 8. This table shows for the United Kingdom, abroad and the total force the case incidence ratio per 1,000 of strength in respect of each disease and injury group during 1924 compared with the average during the years 1921, 1922 and 1923. The average duration of each case in days is also shown for each group during 1924 and over the three-yearly period. From the table it will be seen that the case incidence ratio for all diseases during 1924 was 390·7 per 1,000 of strength, as compared with 429·6 over the three-year period. The total injury rate shows an increase over that for the three-year period, being 72·9 per 1,000 of strength compared with 65·2. The rate for all disabilities during 1924 was 463·6 per 1,000 of strength, compared with 494·8 in the three-year period. The high incidence abroad shown under "effects of parasites" during 1924 compared with the figure for the previous three years was due to a small outbreak of schistosomiasis in Iraq. Further references to this disease are made in chapter III, page 49, and chapter IV, page 74. The average duration of each case for this group of diseases is also affected by the prolonged treatment necessary in cases of schistosomiasis. The higher incidence of general injuries abroad during the three-year period compared with the figure for 1924 can be accounted for by the fact that in 1922 there were 186 cases of heat-stroke and heat exhaustion compared with 42 during 1924. The average number sick daily per 1,000 of strength for disease in the total force was 18·6 compared with 21·2 in the three-year period. The corresponding ratios for injury were 3·8 and 3·4, respectively, and for all disabilities, 22·4 in 1924 compared with 24·7 during the three-year period.

7. The nosological table XI, page 20, shows the actual number of cases of disease, deaths and final invalids, resulting from each disease or group of diseases for the United Kingdom, abroad and the total force during 1924. The same information is given in respect of injuries. The case rate per 1,000 of strength, average number sick daily and average duration of each case in days are also given.

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TABLE II.—DEATHS AND INVALIDS CLASSIFIED BY CAUSE.

Disease group.	1924.			Percentage of total.					
				Cases.		Deaths.		Invalids.	
	Cases.	Deaths.	Invalids.	1924.	*1921/2/3.*	1924.	*1921/2/3.*	1924.	*1921/2/3.*
Dysentery	157	—	—	1·1	*1·5*	—	*0·5*	—	*0·3*
Enteric	22	4	—	0·2	*0·2*	2·8	*1·6*	—	—
Influenza	1,113	—	—	7·6	*5·1*	—	*0·8*	—	—
Malaria	1,174	1	—	8·0	*6·0*	0·7	*0·8*	—	*0·2*
Pneumonia	48	4	—	0·3	*0·4*	2·8	*3·7*	—	—
Pyrexia of unknown origin	68	—	—	0·5	*0·9*	—	*0·3*	—	—
Tuberculosis	55	7	48	0·4	*0·4*	4·9	*3·2*	16·0	*13·7*
Venereal	704	—	6	4·8	*6·0*	—	—	2·0	*1·0*
All other communicable diseases	3,994	1	4	27·2	*32·4*	0·7	*2·1*	1·3	*0·8*
Carriers and contacts	17	—	—	0·1	*0·5*	—	—	—	*0·1*
Pyæmia and septicæmia	1	1	—	0·0	*0·0*	0·7	*3·2*	—	—
Other common diseases due to infection	985	—	2	6·7	*6·1*	—	—	0·7	*0·7*
Nervous system and brain	299	5	85	2·0	*2·1*	3·5	*1·6*	28·3	*23·8*
Eye	133	—	15	0·9	*1·2*	—	—	5·0	*7·8*
Ear and nose	300	—	39	2·0	*1·8*	—	—	13·0	*11·2*
Circulatory system	123	3	12	0·8	*1·4*	2·1	*2·9*	4·0	*9·4*
Lymphatic system	8	—	2	0·1	*0·1*	—	*0·3*	0·7	*1·2*
Respiratory system	470	6	16	3·2	*2·8*	4·2	*3·5*	5·3	*3·8*
Teeth and gums	67	—	—	0·5	*0·7*	—	—	—	*0·2*
Digestive system	1,048	5	9	7·1	*7·4*	3·5	*4·8*	3·0	*3·7*
Disorders of nutrition or metabolism	9	1	3	0·1	*0·0*	0·7	—	1·0	*0·4*
Generative system	243	—	—	1·7	*1·5*	—	—	—	*0·2*
Organs of locomotion	477	—	35	3·3	*2·7*	—	—	11·7	*11·9*
Areolar tissue and skin	449	—	—	3·1	*2·7*	—	—	—	*1·7*
Urinary organs	77	1	6	0·5	*0·5*	0·7	*0·8*	2·0	*3·2*
Tumours and cysts	99	2	2	0·7	*0·5*	1·4	*1·1*	0·7	*0·6*
Poisons	43	—	—	0·3	*0·3*	—	*1·1*	—	*0·1*
Debility	68	—	—	0·5	*0·7*	—	—	—	*0·3*
Other diseases	104	—	—	0·7	*0·9*	—	—	—	*0·1*
Total all diseases	12,355	41	284	84·3	*86·8*	28·7	*32·4*	94·7	*96·4*
Total all injuries	2,304	102	16	15·7	*13·2*	71·3	*67·6*	5·3	*3·6*
Total all diseases and injuries	14,659	143	300	100·0	*100·0*	100·0	*100·0*	100·0	*100·0*

NOTE.—This table does not include 711 invalids in 1921 who were invalided by the Discharge Centre Medical Board.

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Table III.—The Frequency of Attack of certain Diseases.

Frequency of attack.	Sickness abroad.			Sickness at home or abroad.	
	Dysentery	Malaria.	Sandfly.	Upper Air Passage Infections.	Venereal diseases.*
Individuals :—					
Sick once	138	582	627	1,862	513
Sick twice	6	128	45	123	65
Sick three times	1	36	1	9	4
Sick four times	—	22	—	—	2
Sick five times	—	3	—	—	—
Sick six times	—	3	—	—	—
Sick seven times	—	1	—	—	—
Total number of individuals sick	145	775	673	1,994	584
Total number of cases	153	1,074	720	2,135	663
Number of cases arising from each 100 individuals attacked :—					
1924	106	139	107	107	114
1923	*110*	*131*	*114*	*107*	*118*
1922	*107*	*122*	*120*	*108*	*116*
1921	*113*	*126*	*110*	*197*	*118*
Case incidence rate per 1,000 of strength :—					
1924	16·9	118·5	79·4	67·5	21·0
1923	*21·5*	*107·5*	*156·1*	*59·1*	*24·9*
1922	*22·4*	*73·6*	*239·6*	*73·9*	*25·5*
1921	*38·5*	*122·9*	*122·9*	*64·0*	*32·9*

* Excludes cases of congenital syphilis and of re-admissions for further treatment of syphilis.

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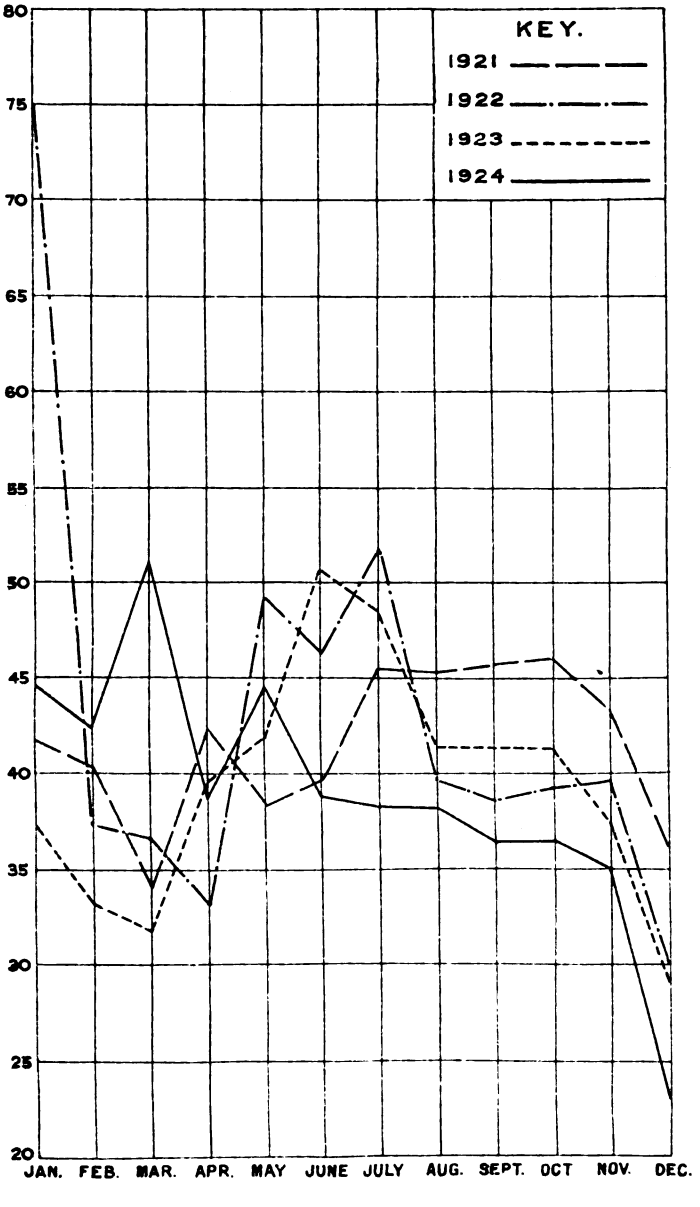
To face page 5.

CHART I.

MONTHLY CASE INCIDENCE OF SICKNESS IN RATIOS PER 1000 OF STRENGTH FOR THE TOTAL FORCE DURING 1921, 1922, 1923 AND 1924.

(CASES OF 48 HOURS DURATION ARE EXCLUDED.)



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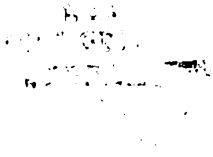

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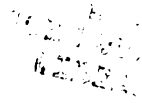

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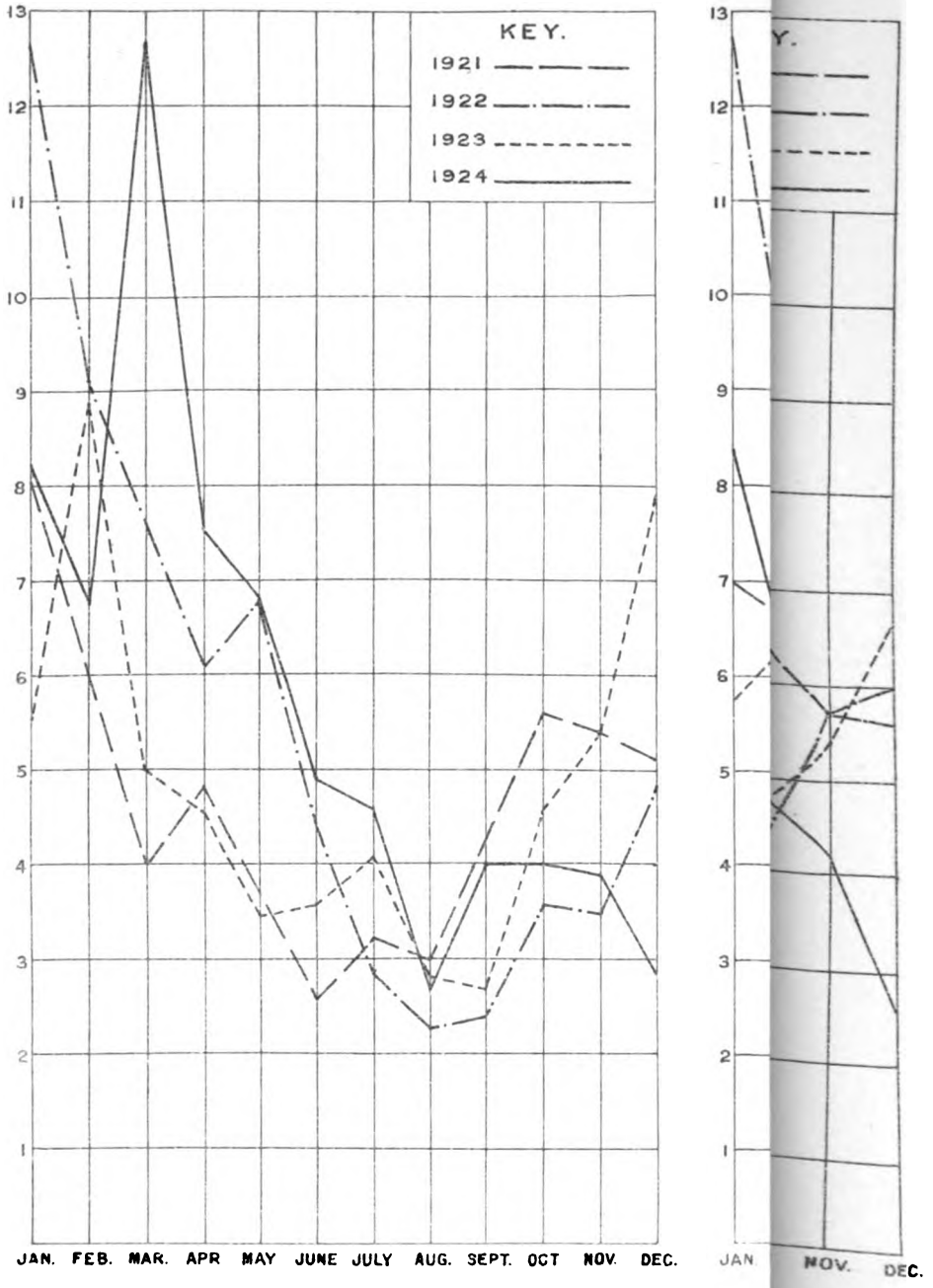

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8. Table VI, page 10, gives an analysis by age of the incidence of disease and injury amongst warrant officers, non-commissioned officers and airmen during 1924. The sickness of officers is not dealt with in this table. Reference to the last column of the table shows that fluctuations occur in the total sickness rate from group to group and that no inference can be drawn from the figures. The highest incidence, 611·5 per 1,000 of strength, occurs amongst boys, *i.e.* under the age of 18. But it must be borne in mind that boys do not serve abroad. The next highest rate is found in the group aged 24 and 25 years; no explanation can be given for the high rate in this group, but figures for future years may possibly throw more light on the factors at work. The lowest incidence is found in men of the age 30 to 34. The table shows that abroad the incidence not only of disease but also of injury is considerably higher in each age group than at home.

9. Table XII, page 33, shows in greater detail particulars of certain diseases marked with a star in table XI. This table shows the case, death and invaliding rates, average number sick daily and average duration of each case in each of the geographical areas.

The Frequency of Attack in certain Diseases.

10.—(i) Table III, page 5, shows the frequency of attack in certain diseases, which have been selected for analysis either because they affect the force as a whole or because they account for a considerable amount of non-effectiveness. The table shows the case incidence rate per 1,000 of strength and the number of cases arising from each 100 individuals attacked, *i.e.*, recurrent rate, in respect of each of the diseases mentioned in the table during the period 1921–1924.

(ii) The figures for 1924 confirm the experience of previous years. As regards dysentery, an increase or decrease in the total case incidence is mainly caused by an increase or decrease in the primary rate, *i.e.*, new cases, and to a much less extent by an increase or decrease in the recurrent rate.

(iii) The figures for malaria show that a rise or fall in the total case rate is brought about by a rise or fall in both primary and recurrent rates.

(iv) An increase of decrease in the sandfly fever rate is effected by the number of individuals attacked once only and to a much less extent by the number attacked more than once.

(v) The figures for upper air passage infections show that an increase or decrease in total case incidence is accompanied by an increase or decrease in the number of individuals having one attack only.

(vi) Fluctuations in the total venereal disease incidence are caused by an increase or decrease mainly in the primary rate and also, though to a much less degree, in the recurrent rate.

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Venereal Disease.

11. The case incidence for all types of venereal disease shows a further reduction, being 22·3 per 1,000 of strength in 1924 as compared with 26·2 in 1923. The primary rate, *i.e.* cases reporting for treatment for the first time after contracting infection and excluding relapses and re-admissions for continued treatment in syphilis, has fallen from 19·3 per 1,000 in 1923 to 16·3 in 1924. In the individual diseases, a reduction of 2·5 per 1,000 has occurred in the total gonorrhœa rate, 1·0 per 1,000 in the syphilis rate and 0·4 per 1,000 in the rate for soft chancre. The main factor in the reduction of the total venereal rate was a decrease of 2·1 per 1,000 in the rate for primary gonorrhœa. A total of 432 cases, for all types of venereal disease, equivalent to a case incidence rate of 19·2 per 1,000 of strength was recorded in the United Kingdom, compared with a rate of 23·8 during 1923. Abroad, 272 cases, representing a case incidence of 30·0 per 1,000 were reported, as compared with a corresponding rate of 31·4 during 1923. The average duration of each case was 53·8 days compared with 50·1 days in 1923. Slight fluctuations in the average duration of each case in the individual diseases are noticeable from year to year. The measures, both prophylactic and other, described in detail in the report for 1921 were continued and extended in scope during the present year and the steady progressive reduction in case incidence which has occurred during the past four years is an indication that the measures are having a beneficial effect. Further analyses of this disease group, both by age and distribution by stations are given in chapters II and III.

Upper Air Passage Infections.

12.—(i) The total case incidence in this group of diseases shows an increase from 59·1 per 1,000 of strength in 1923 to 67·5 in 1924. The increase was general and occurred in all areas with the sole exception of Iraq. The case incidence rate in the United Kingdom was 69·1 compared with 58·6 in 1923; Mediterranean Littoral 86·2 compared with 74·9; India 39·7 compared with 26·4 and Iraq, 54·6 compared with 60·7. The Mediterranean Littoral, as in previous years, shows the highest case incidence. The average duration of each case was 7·4 days as compared with 8·0 days in 1923. Dealing with the individual diseases comprising this group, the incidence of pharyngitis and naso-pharyngitis was 40·9 per 1,000 of strength compared with 33·0 in 1923, tonsillitis 23·0 compared with 20·2, rhinitis 2·6 compared with 4·0 and laryngitis 1·0 compared with 1·8.

(ii) Chart II, facing page 6, shows the monthly case incidence in ratios per 1,000 of strength of this group of diseases at home,

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TABLE IV.—INCIDENCE OF CERTAIN DISEASES IN 1924 COMPARED WITH AVERAGE FOR THE THREE YEARS 1921, 1922 AND 1923.

Disease group.	Case incidence per 1,000 of strength.						Average duration of each case (days).					
	Home.		Abroad.		Total force.		Home.		Abroad.		Total force.	
	1924.	*Average for 1921/2/3.*	1924.	*Average for 1921/2/3.*	1924.	*Average for 1921/2/3.*	1924.	*Average for 1921/2/3.*	1924.	*Average for 1921/2/3.*	1924.	*Average for 1921/2/3.*
Communicable diseases	177·4	*170·4*	368·0	*505·5*	232·0	*261·9*	15·0	*18·3*	16·7	*15·4*	15·8	*16·8*
Contacts and carriers	0·5	*2·7*	0·6	*1·1*	0·5	*2·2*	13·5	*10·9*	33·0	*16·8*	19·2	*11·7*
Other common diseases due to infection	28·9	*24·8*	37·0	*46·0*	31·2	*30·6*	12·5	*14·5*	14·5	*16·0*	13·2	*15·1*
Effects of parasites	0·4	*0·6*	6·4	*1·1*	2·1	*0·8*	9·8	*5·6*	25·8	*8·6*	23·6	*6·7*
Diseases of nervous system and brain	9·0	*9·4*	10·7	*13·3*	9·5	*10·4*	28·6	*29·7*	61·9	*52·4*	39·4	*37·6*
Diseases of the eye	4·1	*5·8*	4·4	*6·1*	4·2	*5·9*	17·0	*18·6*	34·2	*32·7*	22·2	*22·6*
Diseases of ear and nose	9·0	*8·5*	10·8	*9·5*	9·5	*8·9*	20·2	*20·8*	24·1	*21·9*	21·5	*21·1*
Diseases of circulatory system	3·0	*5·3*	6·2	*11·2*	3·9	*6·9*	26·5	*23·9*	46·5	*48·7*	35·6	*34·9*
Diseases of lymphatic and ductless glands	0·2	*0·3*	0·3	*0·3*	0·3	*0·3*	16·4	*45·6*	28·3	*53·1*	21·0	*47·8*
Diseases of respiratory system	14·7	*12·6*	15·2	*17·4*	14·9	*13·9*	19·0	*17·0*	18·2	*22·4*	18·8	*18·9*
Diseases of the teeth and gums	2·4	*3·0*	1·5	*4·3*	2·1	*3·4*	7·6	*10·0*	14·7	*9·4*	9·1	*9·8*
Diseases of the digestive system	29·3	*28·7*	42·6	*57·3*	33·1	*36·5*	18·4	*21·1*	20·6	*16·8*	19·2	*19·3*
Diseases due to disorders of nutrition or metabolism	0·3	*0·1*	0·2	—	0·3	*0·1*	33·1	*30·0*	17·5	—	29·7	*30·0*
Diseases of the generative system	6·4	*6·6*	10·9	*10·2*	7·7	*7·6*	22·4	*18·1*	23·8	*18·7*	23·0	*18·3*
Diseases of the organs of locomotion	14·5	*12·9*	16·4	*14·5*	15·1	*13·3*	17·2	*18·1*	21·3	*20·5*	18·5	*18·8*
Diseases of the areolar tissue and skin	15·0	*13·8*	12·2	*12·5*	14·2	*13·4*	16·2	*18·9*	25·1	*17·7*	18·4	*18·6*
Diseases of urinary organs	2·0	*2·5*	3·5	*3·1*	2·4	*2·7*	27·5	*32·3*	46·0	*46·7*	35·2	*36·8*
Tumours and cysts	3·1	*2·5*	3·2	*2·3*	3·1	*2·4*	17·4	*18·4*	21·4	*27·1*	18·5	*20·6*
Poisons	0·3	*1·2*	4·1	*2·8*	1·4	*1·7*	11·3	*6·3*	15·2	*12·3*	14·7	*9·1*
Other diseases	3·0	*5·3*	4·1	*10·8*	3·4	*6·8*	11·6	*10·9*	21·5	*22·1*	15·1	*15·7*
Total all diseases	323·4	*317·0*	558·4	*729·2*	390·7	*429·6*	16·2	*18·5*	19·2	*17·6*	17·5	*18·1*
General injuries	5·1	*4·6*	13·2	*20·2*	7·5	*8·9*	13·5	*17·1*	26·0	*12·3*	19·8	*14·1*
Local injuries	63·3	*52·3*	70·6	*67·1*	65·4	*56·3*	18·0	*19·7*	21·1	*20·4*	19·0	*20·0*
Total all injuries	68·4	*56·9*	83·9	*87·3*	72·9	*65·2*	17·7	*19·5*	21·9	*18·5*	19·1	*19·2*
Total all disabilities	391·8	*373·9*	642·3	*816·6*	463·6	*494·8*	16·5	*18·7*	19·6	*17·7*	17·7	*18·2*

TABLE V.—MONTHLY CASE INCIDENCE OF UPPER AIR PASSAGE INFECTIONS IN RATIOS PER 1,000 OF STRENGTH FOR AREAS ABROAD IN 1924.

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept	Oct.	Nov.	Dec.
Mediterranean Littoral :—												
1924	12·6	10·1	5·9	4·4	2·9	9·3	12·1	8·6	6·5	6·5	6·3	2·1
Average 1921/2/3	*10·1*	*8·1*	*8·9*	*9·0*	*9·2*	*6·6*	*7·6*	*8·3*	*7·2*	*6·1*	*9·6*	*9·3*
Iraq :—												
1924	5·7	3·5	4·4	2·7	3·6	4·6	3·3	5·0	5·8	9·0	5·1	1·9
Average 1921/2/3	*5·7*	*7·1*	*6·5*	*5·5*	*6·7*	*3·8*	*4·8*	*5·2*	*7·1*	*8·2*	*7·8*	*4·9*
India :—												
1924	5·8	4·1	2·1	3·1	1·6	4·6	5·7	3·7	1·6	3·2	1·6	2·6
Average 1921/2/3	*7·0*	*5·1*	*5·4*	*4·1*	*4·4*	*3·3*	*3·7*	*2·8*	*1·9*	*2·8*	*3·5*	*2·0*

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abroad and in the total force. Features of interest in the chart are :—

(*a*) United Kingdom—The peak in the graph for 1924, which reached its maximum in March. Influenza was widespread during this period and probably many of the cases of nasopharyngitis, pharnygitis, etc., were influenzal in origin.

(*b*) The seasonal incidence shown by the four graphs for the United Kingdom. Generally the case incidence was highest in the early months of the year, reached the minimum in August—September and commenced to rise again towards the end of the year.

(*c*) Abroad—The irregular character of the graphs in each year and also the lack of similarity from year to year.

(iii) Table V, page 8, further analyses the figures as shown by the 1924 graph for areas abroad. The table gives the monthly case incidence ratios per 1,000 of strength for each of the areas included in the force abroad. Figures over the three-year period 1921–1923 have also been inserted for comparison. Further reference to this group of diseases will be found in chapter II, page 39.

Pulmonary Tuberculosis.

13. Forty-two cases of pulmonary tuberculosis, resulting in 4 deaths and 38 invalids from the service, were recorded compared with 53 cases, 2 deaths and 46 invalids during 1923. Eleven of the 38 cases of invaliding were in respect of cases which remained over at the end of the previous year and were discharged from the service during 1924. Of the total of 42 cases, 27 were reported at home and 15 abroad. The tubercle bacillus was found in the sputum in 41 cases, the clinical diagnosis in the remaining case being confirmed by X-ray examination and von Pirquet reaction. The 42 cases may be classified as follows :—

(i) By locality—Five cases were reported from Manston, 4 from Halton, 3 from Henlow, 2 each from Cranwell and Kenley and single cases from 11 other stations at home. Abroad, cases were reported from Iraq 8, Egypt 4, India 2 and Malta 1.

(ii) By trade groups—Nine cases occurred amongst fitters, 8 amongst aircraft hands, 7 amongst clerks and 4 amongst carpenter riggers. Two cases occurred in each of the following trade groups—aircraft apprentices, storekeepers, nursing orderlies, instrument makers, drivers and officers. Single cases were reported from two other trade groups.

(iii) By age groups—Eight cases were recorded amongst men aged 21, 6 from those aged 22, 5 from those aged 24, and 4 from those aged 19. Ages 23 and 27 accounted for

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TABLE VI.—ANALYSIS BY AGE OF INCIDENCE OF DISEASE AND INJURY AMONGST WARRANT OFFICERS, N.C.O.s AND AIRMEN.

Age last birthday.	Average strength.			Case incidence per 1,000 of Strength.								
				Disease.			Injury.			All disabilities.		
	Home.	Abroad.	Total.	Home.	Abroad.	Total.	Home.	Abroad.	Total.	Home.	Abroad.	Total.
Under 18 -	2,363	—	2,363	553·1	—	553·1	58·4	—	58·4	611·5	—	611·5
18 and 19 -	3,153	79	3,232	347·3	*	341·9	66·0	*	65·0	413·3	*	407·0
20 and 21 -	4,169	2,059	6,228	302·0	454·2	352·3	50·6	56·8	52·7	352·6	510·9	404·9
22 and 23 -	4,676	2,964	7,640	303·9	590·8	415·2	76·6	86·4	80·4	380·6	677·1	495·5
24 and 25 -	2,043	1,080	3,123	327·0	720·4	463·0	80·8	84·3	82·0	407·7	804·6	545·0
26 and 27 -	1,147	529	1,676	274·6	616·3	382·5	69·7	104·0	80·5	344·4	720·2	463·0
28 and 29 -	868	396	1,264	262·7	596·0	367·1	64·5	103·6	76·7	327·2	699·5	443·8
30 to 34 -	1,089	534	1,623	205·7	518·7	308·8	46·8	73·0	55·5	252·5	591·8	364·1
35 and over	824	363	1,187	242·7	666·7	372·4	49·8	63·4	53·9	292·5	730·0	426·4
Total -	20,332	8,004	28,336	330·4	569·1	397·8	64·3	78·0	68·2	394·7	647·1	466·0

NOTE: *, not calculated owing to very small strength.

TABLE VII.—CASES OF INJURY CLASSIFIED BY TYPE AND CAUSE OF INJURY.

On or off duty.	No. of cases.							
	Airscrew accidents.	Athletics.	Flying accidents.	Motor car, cycle and lorry.	Starting motor engines.	Other causes.	Total.	Per cent. of total cases.
On duty - - - -	42	704	169	39	42	420	1,416	63
Not on duty - - -	—	114	2	270	8	393	787	35
Not stated - - -	—	2	—	—	1	48	51	2
Total - - -	42	820	171	309	51	861	2,254	100
Nature of injury :—								
General - - -	5	8	82	55	—	44	194	8·6
Head and face - -	3	46	56	93	3	144	345	15·3
Trunk - - - -	—	38	6	9	2	67	122	5·4
Upper extremity - -	25	116	12	52	45	249	499	22·1
Lower extremity - -	9	612	15	100	1	357	1,094	48·6
Total - - -	42	820	171	309	51	861	2,254	100
Deaths :—								
On duty - - -	2	1	69	—	—	6	78	78
Not on duty - -	—	2	1	12	—	7	22	22
Total - - -	2	3	70	12	—	13	100	100
Cases on duty :—								
(i) as percentage of total cases on duty -	3·0	49·7	12·0	2·7	3·0	29·6	—	100
(ii) as percentage of total cases on or off duty	1·8	31·3	7·5	1·7	1·8	18·7	62·8	—
Cases off duty or not stated as a percentage of total cases on or off duty - - - - -	—	5·1	0·1	12·1	0·4	19·5	37·2	—
All cases on or off duty as percentage of total cases on or off duty	1·8	36·4	7·6	13·8	2·2	38·2	100·0	100

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TABLE VIII.—CASUALTIES DUE TO FLYING ACCIDENTS ON DUTY.

Rank.	*1921.*	*1922.*	*1923.*	1924.
Officers.				
Killed	*24*	*34*	*33*	46
Injured	*37*	*41*	*40*	65
Cadets.				
Killed	—	*1*	—	1
Injured	*1*	*2*	*1*	1
Airmen.				
Killed	*12*	*15*	*13*	22
Injured	*12*	*9*	*25*	34
Total.				
Killed	*36*	*50*	*46*	69
Injured	*59*	*52*	*66*	100
Total cases	*86*	*102*	*112*	169
Deaths as a percentage of total casualties	*42*	*49*	*41*	41
Average duration per case :				
Deaths included	*37 days*	*25 days*	*30 days*	21 days
Deaths excluded	*65 days*	*48 days*	*51 days*	37 days
Case rates per 1,000 of strength :				
Officers.				
Deaths	*8·6*	*11·9*	*11·0*	14·4
Injuries	*13·1*	*14·3*	*13·3*	20·4
Total	*21·7*	*26·2*	*24·3*	34·8
Airmen.				
Deaths	*0·5*	*0·6*	*0·5*	0·8
Injuries	*0·5*	*0·3*	*0·9*	1·2
Total	*1·0*	*0·9*	*1·4*	2·0

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3 cases in each age group. Two cases occurred in each of the following ages, 17, 20, 26 and 31. Single cases in those of 28, 34, 41, 42 and 47 years of age.

(iv) By length of service—Nine cases occurred amongst those with 3 years' service, 8 amongst those with 5 years' service, 5 amongst those with 4 years' and 4 each amongst those with 1 year's, 2 years' and 7 years' service, 3 occurred amongst men with under 12 months' service and 2 amongst those with 6 years' service. Single cases were recorded in each of the groups with 8 years', 9 years' and 22 years' service.

(v) By family history—In 29 of the cases no family history of tuberculosis was elicited, 4 gave a definite family history and no details were recorded in the remaining 9 cases.

Cause of Injury.

14. An analysis of cases of injury during 1924, classified by nature and cause of injury, is shown in table VII, page 10. A distinction is made between injuries occurring on and off duty. A departure from the procedure of previous years has been made in the present report, in that, injuries sustained during athletics are now divided into those which may be regarded as occurring on duty, *i.e.*, in organised games, and those contracted off duty. For the purpose of analysis certain cases of injury, *i.e.* heatstroke, sunstroke and heat exhaustion have been excluded from the table, and consequently the number of cases of injury shown by this table does not agree with the total shown in the nosological table, page 31. These injuries have been excluded from table VII partly owing to the difficulty in deciding whether they occur on, as opposed to off duty, and also as it is doubtful whether they should logically be classified as injuries. Abrasions caused by ill-fitting boots have also been excluded for the same reasons. The table shows that a total of 2,254 cases was recorded during the year, equivalent to a case incidence of 71·3 per 1,000 of strength compared with a corresponding rate of 60·3 in 1923.

15. Of the total, 63 per cent. were reported to have occurred on duty and 35 per cent. off duty. No information as to whether on or off duty is available in the remaining 2 per cent. As regards site of injury, the table bears out the experience of previous years, the lower extremity alone being most frequently involved. During 1924 injuries to the lower limbs accounted for 48·6 per cent of all cases of injury, the corresponding percentages during 1923, 1922 and 1921 were 50·3, 49·4 and 47·0 respectively. From these figures it appears that in almost 50 per cent. of all cases of injury the lower limbs alone may be expected to be involved.

16. It will be seen from the table that accidents during athletics account for 36·4 per cent. of the total and that the lower

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limbs are chiefly involved. However, if all injuries sustained during athletics are excluded, it appears that the lower extremities are involved in 33·6 per cent. of the remaining cases, the corresponding figures during 1923, 1922 and 1921 being 37·5, 35·8 and 34 ·5 per cent. respectively. Injuries resulting from flying accidents on duty amounted to 7·5 per cent. of the total cases of injury, compared with 6·3 per cent. in 1923, 6·1 per cent. in 1922 and 6·4 per cent. in 1921. Apart from injury there were 398 cases of disease the result of recent or remote injury, compared with 346, 411 and 408 cases in 1923, 1922 and 1921 respectively. The commonest types of disease were cellulitis 114 cases, recurrent synovitis 98 and periostitis 13.

17. *Injuries sustained in Flying Accidents.*—Table VIII, page 11, gives an analysis of casualties due to flying accidents on duty during the years 1924, 1923, 1922 and 1921. From the table it will be seen that a total of 169 cases of injury, resulting in 69 deaths, was recorded during 1924. The number of deaths, as a percentage of the total casualties due to flying, remains the same as in 1923, at 41 per cent. The average duration of each case in days, both including and excluding deaths, is the lowest figure reached during the past four years. Comparing the figures for the four years, it will be seen that the case rates per 1,000 of strength both for officers and men were highest during 1924 Further, the increase in the case rate for officers is more marked for injuries than for deaths. The slight increase in the death rate for airmen during 1924 is considered to be due to the increasing numbers of airman-pilots qualifying and to the increasing number of airmen carried as passengers or undergoing instruction in aircraft. Amongst airmen the cases were distributed in the various trade groups as follows :—fitters 19 cases, carpenters and riggers 15, wireless operators 10, airman-pilots and aerial gunners 6, and metal workers 4. The remaining five cases were distributed fairly evenly amongst the remaining trade groups. In conjunction with the progressive increase of cases shown in table VIII, it should be borne in mind that the number of hours flown has increased each year in an even greater ratio. Also aircraft are increasing in size and carrying capacity and consequently a greater number of personnel is exposed to the risk of injury in the event of large aircraft being involved in an accident. A further factor during 1924 was the fact that 4 collisions in the air accounted for 10 deaths. During 1923 no deaths from accidents of this kind were recorded. Actually, the hours flown per fatal accident were higher during 1924 than in any of the previous years. Table VII, page 10, shows 2 cases, one of which was fatal, as having occurred off duty. In one of them the injuries were sustained whilst a privately-owned light aeroplane was being flown. The fatal case was that of an officer who crashed, whilst not employed on service flying duties.

18. *Injuries due to Airscrews.*—A total of 42 cases resulting in 2 deaths was reported, compared with 38 cases with one death

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in 1923, 23 cases with no death in 1922 and 35 cases with one death in 1921. Injuries under this heading may be sustained in three ways—

(i) Through being struck by the airscrew whilst starting the engine by swinging the blades. Of the total of 42 cases, 32 resulting in one death were caused in this manner.

(ii) By other means whilst starting the engine by swinging. Three cases were reported in this group. Two sustained sprains due to violence of effort, the third, a contused wound through striking a projecting part of the aircraft.

(iii) Through being struck by the blades when not engaged in swinging the airscrew. Seven cases with one death were recorded under this heading. The single death was that of an airman, who, whilst adjusting a trestle under the floats of a seaplane, walked between the floats and was struck on the head by the revolving airscrew.

The average duration of each case was 55·3 days. The 42 cases were distributed amongst the trade groups as follows :— fitters 19, carpenters and riggers 11, aircraft hands 4, officers 3, boys 2, and single cases in three other trade groups. Reference to table VII shows that injuries caused by airscrews accounted for 1·8 per cent. of the total cases of injury from all causes; the corresponding figures in 1923, 1922 and 1921 were 2·1, 1·4 and 2·0 per cent., respectively.

19. *Injuries sustained whilst starting other engines.*—Injuries under this heading are usually caused by a blow from the starting handle, consequent on back-fire of an engine. A total of 51 cases occurred during 1924, compared with 46 in 1923, 48 in 1922 and 71 in 1921. There were no resultant invalids during 1924. Of the 51 cases reported, 42 occurred on duty and 8 off duty; whether on or off duty was not stated in the remaining case. Injuries sustained on duty amounted to 1·8 per cent. of the total injuries from all causes; the corresponding figures for 1923, 1922, and 1921 were 2·6, 2·9 and 4·0 per cent., respectively. The average duration of each case was practically the same during 1924 and 1923, being 26·0 and 26·1 days respectively. The commonest type of injury as in previous years, was a Colles' fracture, 22 cases whilst other fractures of the bones of the forearm and carpus accounted for a further 15 cases. Sprains and contusions accounted for an additional six cases. In three cases the face was injured through the starting handle swinging round. In a further case the lower limbs were injured. As regards the seasonal incidence, there was but little difference, 26 cases occurring in the winter months compared with 25 in the period from April to October. The highest incidence, in any one month, 8 cases, occurred in September. The 51 cases were distributed amongst the trade groups as follows :—drivers 27, aircraft hands 8, fitters 5, officers 4, the remaining 7 cases being scattered through 4 other trade groups.

20. *Injuries caused by motor vehicles other than whilst starting engines.*—There were 309 cases of injury with 12 resulting deaths,

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compared with 199 cases with 5 deaths in 1923, 122 with one death in 1922 and 150 cases with one death in 1921. Injuries sustained whilst on duty amounted to 1·7 per cent. of the total due to all causes. The average duration of each case was 26·7 days, compared with 22·1 days in 1923, 29·8 days in 1922 and 25·8 days in 1921. Accidents involving riders of motor cycles accounted for 224 cases or 72·5 per cent. of the total due to motor transport. Of these 224 cases, 19 occurred on duty, 171 off duty and 34 during leave. Eleven of the 12 deaths resulted from motor-cycle accidents off duty. Occupants of lorries and tenders were injured in 26 instances, occupants of cars in a further 20. The remaining 39 cases involved non-occupants of vehicles, 3 were caused by R.A.F. transport, 25 by civil transport, details of ownership are not stated in the remaining 11 cases, of which one proved fatal.

21. *Wounds in action.*—Five cases, all due to bullet wounds, occurred during 1924, compared with one case in 1923. Three were reported from Iraq and two in Palestine. All five were wounded by hostile gunfire from the ground whilst engaged on aerial duties. There were no deaths and no resulting invalids. The average duration of each case was 47·6 days.

22. *Accidental gunshot wounds.*—A total of 22 cases with 3 deaths was reported, compared with 11 cases and no deaths during 1923, 13 cases with 2 deaths in 1922 and 20 cases with 2 deaths in 1921. Of the 22 cases, 18 were reported to have occurred on duty and 4 off duty. The fatal cases were—an airman who accidentally shot himself whilst cleaning his rifle, an N.C.O. who was removing a detonator from a bomb which exploded, and an airman accidentally killed by a bullet during the testing of a machine gun.

23. *Injuries sustained during athletics.*—A total of 820 cases, resulting in 3 deaths, was recorded, compared with 638 cases and 7 deaths in 1923. Of the total, 704 occurred on duty, *i.e.*, in organised games, 105 off duty, *i.e.*, in unorganised games, and 9 whilst on leave; details are lacking the 2 remaining cases. The case incidence per 1,000 of strength was 25·9, compared with 21·4 during 1923. The 3 deaths occurred during bathing, 2 being due to drowning. The third resulted from a fracture-dislocation of the 5th cervical vertebra sustained whilst diving. Football accounted for 70 per cent. of the total injuries due to athletics. The corresponding percentages during 1923, 1922 and 1921 were 69, 74 and 71, respectively, an almost constant percentage during the four years. The commonest injuries sustained during football were synovitis knee 153 cases, sprained ankle 117, contusion of legs 50, and sprained knee 32.

24. *Injuries caused by animals.*—A total of 33 cases was reported, compared with 16, 20 and 13 in 1923, 1922 and 1921, respectively. The average duration of each case was 19·6 days in 1924, 18·1 in 1923, 18·7 in 1922, and 17·2 days in 1921.

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Thirty-one cases were treated for dog-bites, 25 of which occurred in India, 5 in Iraq and one at home. Pasteur treatment was given in 29 instances. Of the two remaining cases, one was admitted for a scorpion-sting and one for a shark-bite sustained whilst swimming in the Shatt-el-Arab.

25. *Other injuries on duty.*—A total of 394 cases, with 4 deaths, occurred during 1924. compared with 384 with 8 deaths during 1923, 317 with 4 deaths in 1922 and 355 with 3 deaths in 1921. Two of the 4 deaths were due to shock following severe burns. The average duration of each case was 16·5 days, compared with 17·6, 16·6 and 19·9 days in 1923, 1922 and 1921 respectively.

26. *Other injuries off duty.*—These amounted to 319 cases with 3 deaths, compared with 239 with no deaths in 1923, 316 with 3 deaths in 1922 and 311 with 8 deaths in 1921. The average duration of each case was 16·4 days in 1924, 17·5 in 1923, 16·6 in 1922 and 17·7 in 1921. Two of the 3 deaths were due to drowning, the third to a fractured skull sustained through being run over by a train.

27. *Other injuries on leave.*—Forty-four cases with no deaths occurred during 1924. The average duration of each case was 16·7 days.

28. *Other injuries include*—

(i) Homicide, personal conflicts, &c., which accounted for 20 cases, resulting in one death. The fatal case was that of an N.C.O. murdered by Egyptian students.

(ii) One case of suicide and one of attempted suicide which were reported during the year; in addition there was one case of a self-inflicted wound.

An additional 21 cases were reported where no details were given as to whether the individuals were on duty, off duty or on leave at the time the injuries were sustained.

Disease and Injury amongst different types of Unit.

29. Table IX, page 18, shows sickness subdivided into disease and injury amongst unit types at home, abroad and in the total force. The case incidence rates for both disease and injury, death rate, invaliding rate, the ratio of the number sick daily and average duration of each case in days, are shown in respect of each unit group. The force as a whole shows a disease rate of 390·7 per 1,000 of strength, and an injury rate of 72·9 per 1,000 of strength, a proportion of disease to injury of 5·4 to 1, compared with 6·6 to 1 in 1923. During 1924, the disease rate showed a reduction and the injury rate an increase. The force abroad shows a disease rate of 558·4 and an injury rate of 83·9 per 1,000 of strength, equivalent to a proportion of disease to injury of 6·6 to 1, compared with a corresponding proportion of 9·3 to 1 in 1923. A reduction in the disease rate

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and an increase in the injury rate has occurred abroad during 1924. At home, the disease rate was 323·4 and the injury rate 68·4 per 1,000 of strength, giving a ratio of disease to injury of 4·7 to 1, compared with 5·1 to 1 in 1923. An increase in both disease and injury rates was recorded in the home force during 1924, the increase being more marked in the injury rate. Disease rates for the force abroad were 72 per cent. and injury rates 22 per cent. in excess of those for the home force. At home the unit group including head-quarters and miscellaneous units showed the highest proportion of disease to injury at 7·6 to 1. The lowest disease-injury figure (3·2 to 1) was found in flying units. Abroad, the highest disease injury proportion (8·6 to 1) also occurred in the headquarters group, the lowest (5·2 to 1) amongst flying units. The lowest injury rates both at home and abroad were recorded in the headquarters group. The high sickness rate shown in the group, including depôts and schools at home, compared with other home units, is due to the inclusion in this group of boys under training.

Disease and Injury amongst the different Trade Groups.

30. Table X, page 19, shows an analysis of disease and injury in each of the individual trade groups. The table shows the case incidence rates for certian diseases or groups of diseases and the injury rate in respect of each trade group. The composition of the nine trade groups was described in detail in the report for 1923 and remains unaltered. It should be borne in mind that injuries sustained during athletics are common to all trade groups and that during 1924, 36·4 per cent. of all cases of injury were caused thereby.

Features of interest in the table are as follow :—

(i) The highest disability rate was found amongst boys who also show the highest disease rate and an injury rate above the average for the total force.

(ii) The highest injury rate occurred in the group composed of officers, cadets and airman-pilots. Injuries sustained in flying accidents accounted for 30 per cent. of the total injury rate in this group.

(iii) As would be expected, the highest incidence of upper air passage infections, impetigo, and diseases of the digestive system is found amongst boys.

(iv) As in previous years, venereal disease is most frequently found in the driver group, possibly because more opportunity presents itself and the nature of the work to a certain extent removes men from the discipline and supervision of their unit.

(v) Sickness incidence was lowest amongst aircraft hands; this group shows a low rate of both disease and injury.

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Table IX.—Disease and Injury Incidence amongst different Types of Unit.

Type of Unit.		Home.					Abroad.					Total.				
		Ratios per 1,000 of average strength.				Average duration of case.	Ratios per 1,000 of average strength.				Average duration of case.	Ratios per 1,000 of average strength.				Average duration of case.
		Cases.	Deaths.	Invalided out of service.	No. sick daily.		Cases.	Deaths.	Invalided out of service.	No. sick daily.		Cases.	Deaths.	Invalided out of service.	No. sick daily.	
Flying units	Disease	249·0	0·9	7·7	12·2	18·0	532·6	0·9	5·3	25·4	17·5	326·3	0·9	7·1	15·8	17·8
	Injury	76·6	5·5	0·2	4·0	19·1	102·0	9·4	1·2	6·3	22·4	83·5	6·6	0·5	4·6	20·3
	Total	325·5	6·4	7·9	16·2	18·3	634·4	10·3	6·5	31·6	18·3	409·8	7·4	7·5	20·5	18·3
Depots, (store and repair), ground schools, and armoured car companies.	Disease	448·2	1·2	11·8	18·7	15·3	562·8	2·7	5·4	32·7	21·2	480·9	1·6	9·9	22·6	17·3
	Injury	78·8	0·8	0·5	3·6	16·6	75·4	1·6	0·3	4·4	21·4	77·8	1·0	0·5	3·8	18·0
	Total	527·0	2·0	12·3	22·3	15·5	638·1	4·4	5·7	37·1	21·3	558·7	2·6	10·4	26·5	17·4
Headquarters, personnel depots and other small units.	Disease	214·3	0·9	12·3	9·6	16·4	595·5	2·5	7·6	29·8	18·4	334·3	1·4	10·8	16·0	17·5
	Injury	29·3	0·9	0·5	1·3	15·7	68·5	1·5	1·0	4·0	21·5	41·8	1·1	0·6	2·1	18·7
	Total	243·6	1·9	12·8	10·8	16·3	664·0	4·0	8·6	33·7	18·7	376·0	2·5	11·5	18·1	17·6
Total	Disease	323·4	1·0	10·2	14·3	16·2	558·4	2·0	5·8	29·3	19·2	390·7	1·3	8·9	18·6	17·5
	Injury	68·4	2·7	0·4	3·3	17·7	83·9	4·5	0·8	5·0	21·9	72·9	3·2	0·5	3·8	19·1
	Total	391·8	3·7	10·6	17·6	16·5	642·3	6·5	6·6	34·3	19·6	463·6	4·5	9·5	22·4	17·7

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TABLE X. — NOSOLOGICAL TABLE CLASSIFIED BY TRADES SHOWING NUMBER OF CASES PER 1,000 OF STRENGTH IN EACH BRANCH OR TRADE AND FOR THE TOTAL FORCE IN 1924.

Trade Group.	Disease.								
	Upper air passage infections.	Impetigo.	Scabies.	Venereal disease.	Digestive system.	Other diseases.	Total diseases.	Total injuries.	Total diseases and injuries.
Aircraft hands -	61·5	9·4	4·7	28·4	30·8	195·8	330·7	51·9	382·6
Boys - - -	205·0	52·9	2·2	0·9	53·7	363·7	678·4	78·9	757·3
Carpenters and riggers - -	51·2	8·4	3·0	24·1	27·4	228·8	342·9	81·6	424·6
Clerks - - -	48·3	3·2	3·5	23·7	35·8	270·0	384·5	50·2	434·7
Drivers - -	52·6	4·7	3·7	35·0	32·5	307·8	436·3	74·1	510·4
Fitters - - -	66·8	7·6	3·3	25·1	32·7	255·9	391·4	91·7	483·1
Metal workers -	54·1	8·7	1·5	27·0	33·1	245·8	370·2	73·4	443·7
Officers, cadets, airman-pilots -	46·3	2·1	0·6	2·4	33·2	245·4	330·0	114·8	444·8
Other skilled trades	62·0	5·9	2·3	22·9	28·2	299·0	420·3	68·4	488·7
Total force -	67·5	10·1	3·1	22·3	33·1	254·7	390·7	72·9	463·6

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Table XI.—Nosological Table for the United Kingdom, Abroad, and the Total Force, 1924.

Disease.	United Kingdom. Average Strength, 22,559.						Abroad. Average Strength, 9,063.							Total Force. Average Strength, 31,622.					
	No. of cases.	No. of deaths.	No. finally invalided.	Ratio of cases per 1,000 of strength.	Averages.		No. of cases.	No. of deaths.	No. Invalided to United Kingdom.	No. finally invalided.	Ratio of cases per 1,000 of strength.	Averages.		No. of cases.	No. of deaths.	No. finally invalided.	Ratio of cases per 1,000 of strength.	Averages.	
					No. sick daily.	Duration of case.						No. sick daily.	Duration of case.					No. sick daily.	Duration of case.
Communicable diseases.						Days.							Days.						Days.
Diphtheria	7	—	—	0·3	0·5	28·4	5	—	—	—	0·6	0·4	29·0	12	—	—	0·4	0·9	28·7
*Dysentery	4	—	—	0·2	0·5	42·5	153	—	18	—	16·9	23·6	56·5	157	—	—	5·0	24·1	56·2
*Enteric and paratyphoid	2	—	—	0·1	0·1	24·0	20	4	1	—	2·2	3·7	67·9	22	4	—	0·7	3·8	63·9
*Enteritis (acute) and gastro-enteritis (acute)	139	—	—	6·2	3·5	9·3	289	—	—	—	31·9	5·8	7·3	428	—	—	13·5	9·3	8·0
Impetigo contagiosa	269	—	—	11·9	10·9	14·8	49	—	—	—	5·4	2·0	14·6	318	—	—	10·1	12·8	14·8
*Influenza (including influenzal pneumonia)	1,062	—	—	47·1	26·0	9·0	51	—	—	—	5·6	1·2	8·5	1,113	—	—	35·2	27·2	8·9
*Malaria	100	—	—	4·4	2·7	9·8	1,074	1	11	—	118·5	32·6	11·1	1,174	1	—	37·1	35·3	11·0
Measles	25	—	—	1·1	1·4	20·2	1	—	—	—	0·1	0·1	22·0	26	—	—	0·8	1·4	20·3
Mumps	43	—	—	1·9	2·5	21·6	10	—	—	—	1·1	0·6	20·5	53	—	—	1·7	3·1	21·4
Pneumonia, lobar	28	2	—	1·2	2·5	32·9	20	2	1	—	2·2	1·9	34·8	48	4	—	1·5	4·4	33·7
*Pyrexia of unknown origin	41	—	—	1·8	0·8	7·4	27	—	—	—	3·0	1·1	15·0	68	—	—	2·2	1·9	10·4
Rubella	29	—	—	1·3	1·2	14·9	1	—	—	—	0·1	0·0	10·0	30	—	—	0·9	1·2	14·7
*Sandfly fever	—	—	—	—	—	—	720	—	—	—	79·4	13·5	6·9	720	—	—	22·8	13·5	6·9
*Scabies	88	—	—	3·9	2·2	9·0	10	—	—	—	1·1	0·2	7·1	98	—	—	3·1	2·4	8·8
Scarlet fever	24	1	—	1·1	3·2	48·7	7	—	—	—	0·8	0·8	40·4	31	1	—	1·0	4·0	46·8
Smallpox	—	—	—	—	—	—	3	—	—	—	0·3	0·7	80·0	3	—	—	0·1	0·7	80·0

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TABLE XI.—NOSOLOGICAL TABLE FOR THE UNITED KINGDOM, ABROAD, AND THE TOTAL FORCE, 1924—*cont.*

Disease.	United Kingdom. Average Strength, 22,559.						Abroad. Average Strength, 9,063.							Total Force. Average Strength, 31,622.					
	No. of cases.	No. of deaths.	No. finally invalided.	Ratio of cases per 1,000 of strength.	Averages.		No. of cases.	No. of deaths.	No. invalided to United Kingdom.	No. finally invalided.	Ratio of cases per 1,000 of strength.	Averages.		No. of cases.	No. of deaths.	No. finally invalided.	Ratio of cases per 1,000 of strength.	Averages.	
					No. sick daily.	Duration of case.						No. sick daily.	Duration of case.					No. sick daily.	Duration of case.
Communicable Diseases—cont.						Days.							Days.						Days.
*Tuberculosis.																			
Respiratory	27	2	22	1·2	3·9	52·4	15	2	10	16	1·8	5·2	126·4	42	4	38	1·4	9·1	78·9
Other	9	2	8	0·4	3·2	130·2	4	1	1	2	0·4	1·4	131·2	13	3	10	0·4	4·6	130·5
Total—Tuberculosis	36	4	30	1·6	7·1	71·9	19	3	11	18	2·2	6·6	127·6	55	7	48	1·8	13·7	91·1
*Acute upper air passage infections.																			
Laryngitis	26	—	—	1·2	0·7	10·3	6	—	—	—	0·7	0·1	4·5	32	—	—	1·0	0·8	9·2
Inflammation of fauces, naso-pharyngitis and pharyngitis	989	—	—	43·8	18·3	6·8	303	—	—	—	33·4	5·1	6·2	1,292	—	—	40·9	23·4	6·6
Rhinitis, acute catarrhal	35	—	—	1·6	0·6	5·8	48	—	—	—	5·3	0·6	4·7	83	—	—	2·6	1·2	5·1
Tonsillitis (including quinsy and Vincent's Angina)	508	—	—	22·5	12·3	8·9	220	—	—	—	24·3	5·5	9·2	728	—	—	23·0	17·8	9·0
Total—Upper air passage infections	1,558	—	—	69·1	31·8	7·5	577	—	—	—	63·7	11·3	7·2	2,135	—	—	67·5	43·2	7·4

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***Venereal disease.**																		
Gonorrhœa, acute - -	251	—	1	11·1	38·5	56·2	139	—	—	—	15·3	24·6	64·8	390	—	1	12·3	63·1	59·2
Gleet, relapse and other complications - -	95	—	1	4·2	13·0	50·0	45	—	1	—	5·0	8·2	66·8	140	—	1	4·4	21·2	55·4
Total—Gonorrhœa - -	346	—	2	15·3	51·5	54·5	184	—	1	—	20·3	32·8	65·3	530	—	2	16·8	84·3	58·2
Syphilis.																			
Primary admissions - -	36	—	4	1·6	4·2	42·4	31	—	—	—	3·4	5·8	68·3	67	—	4	2·1	10·0	54·3
Admissions for further treatment - - -	31	—	—	1·4	2·5	29·1	9	—	2	—	1·0	1·4	55·4	40	—	—	1·3	3·8	35·0
Total—Syphilis - -	67	—	4	3·0	6·6	36·2	40	—	2	—	4·4	7·1	65·4	107	—	4	3·4	13·8	47·1
Soft chancre - - -	19	—	—	0·8	1·3	24·6	48	—	1	—	5·3	4·1	30·9	67	—	—	2·1	5·3	29·1
*Total—Venereal diseases	432	—	6	19·2	59·3	50·3	272	—	4	—	30·0	44·0	59·2	704	—	6	22·3	103·3	53·8
Other communicable diseases - - - -	114	—	4	5·1	7·7	24·6	26	—	—	—	2·9	2·5	34·7	140	—	4	4·4	10·1	26·5
TOTAL — COMMUNICABLE DISEASES -	4,001	7	40	177·4	164·0	15·0	3,334	10	46	18	368·0	152·5	16·7	7,335	17	58	232·0	316·5	15·8
Contacts and carriers	12	—	—	0·5	0·4	13·5	5	—	—	—	0·6	0·5	33·0	17	—	—	0·5	0·9	19·2
Other common diseases due to infection.																			
Abscess, hand and finger -	56	—	—	2·5	1·9	12·7	17	—	—	—	1·9	0·7	15·8	73	—	—	2·3	2·7	13·4
Abscess, other - - -	96	—	—	4·3	3·4	12·8	35	—	—	—	3·9	1·3	13·4	131	—	—	4·1	4·6	13·0
Boils - - - - -	155	—	—	6·9	3·9	9·1	61	—	—	—	6·7	2·0	12·2	216	—	—	6·8	5·9	10·0
Carbuncles - - -	25	—	—	1·1	1·0	14·0	7	—	—	—	0·8	0·2	11·0	32	—	—	1·0	1·2	13·3
Cellulitis - - - -	253	—	—	11·2	7·8	11·3	177	—	—	—	19·5	6·6	13·6	430	—	—	13·6	14·4	12·3

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TABLE XI.—NOSOLOGICAL TABLE FOR THE UNITED KINGDOM, ABROAD, AND THE TOTAL FORCE, 1924—*cont.*

Disease.	United Kingdom. Average Strength, 22,559.						Abroad. Average Strength, 9,063.							Total Force. Average Strength, 31,622.					
	No. of cases.	No. of deaths.	No. finally invalided.	Ratio of cases per 1,000 of strength.	Averages.		No. of cases.	No. of deaths.	No. invalided to United Kingdom.	No. finally invalided.	Ratio of cases per 1,000 of strength.	Averages.		No. of cases.	No. of deaths.	No. finally invalided.	Ratio of cases per 1,000 of strength.	Averages.	
					No. sick daily.	Duration of case.						No. sick daily.	Duration of case.					No. sick daily.	Duration of case.
Other Common Diseases due to Infection—cont.						Days.							Days.						Days.
Lymphadenitis and lymphangitis	39	—	—	1·7	1·8	16·7	23	—	—	—	2·5	1·4	21·7	62	—	—	2·0	3·2	18·6
Osteo-myelitis, periostitis, osteitis	16	—	2	0·7	2·2	49·2	7	—	—	—	0·8	0·5	26·0	23	—	2	0·7	2·6	42·1
Pyæmia, septicæmia	—	—	—	—	—	—	1	1	—	—	0·1	0·0	7·0	1	1	—	0·0	0·0	7·0
Ulcer	11	—	—	0·5	0·4	13·5	7	—	—	—	0·8	0·6	29·1	18	—	—	0·6	1·0	19·6
TOTAL — OTHER COMMON DISEASES DUE TO INFECTION	651	—	2	28·9	22·3	12·5	335	1	—	—	37·0	13·3	14·5	986	1	2	31·2	35·6	13·2
Effects of Parasites	9	—	—	0·4	0·2	9·8	58	—	—	—	6·4	4·1	25·8	67	—	—	2·1	4·3	23·6
Diseases of Nervous System and Brain.																			
Neuritis	31	—	8	1·4	2·6	30·5	19	—	2	—	2·1	2·9	55·0	50	—	8	1·6	5·4	39·8
Nerve paralysis	4	—	—	0·2	0·4	33·2	2	—	1	—	0·2	0·6	102·5	6	—	—	0·2	0·9	56·3
Epilepsy (including observation cases)	33	—	11	1·5	1·5	17·2	8	—	4	5	0·9	1·3	57·5	41	—	16	1·3	2·8	25·0

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Neurasthenia	58	—	27	2·6	4·9	30·9	35	—	13	4	3·9	4·5	47·1	93	—	31	2·9	9·4	37·0
Mental diseases (including observation cases)	15	—	10	0·7	3·0	73·5	14	1	10	6	1·5	5·2	135·5	29	1	16	0·9	8·2	103·4
Other diseases of nervous system	61	3	12	2·7	3·4	20·2	19	1	3	2	2·1	2·0	39·4	80	4	14	2·5	5·4	24·7
TOTAL—DISEASES OF NERVOUS SYSTEM AND BRAIN	202	3	68	9·0	15·8	28·6	97	2	33	17	10·7	16·4	61·9	299	5	85	9·5	32·2	39·4
Diseases of the eye.																			
Infections	56	—	6	2·5	2·9	18·8	32	—	4	1	3·5	3·0	34·0	88	—	7	2·8	5·8	24·3
Other diseases of the eye	37	—	8	1·6	1·5	14·4	8	—	2	—	0·9	0·8	35·2	45	—	8	1·4	2·2	18·1
TOTAL — DISEASES OF THE EYE	93	—	14	4·1	4·3	17·0	40	—	6	1	4·4	3·7	34·2	133	—	15	4·2	8·1	22·2
Diseases of Ear and Nose.																			
Otitis media, acute	36	—	—	1·6	2·1	21·8	13	—	—	—	1·4	0·8	21·7	49	—	—	1·5	2·9	21·8
Otitis media, chronic	57	—	29	2·5	3·3	21·4	42	—	11	4	4·6	3·8	33·2	99	—	33	3·1	7·1	26·4
Other diseases of ear and nose	109	—	6	4·8	5·7	19·1	43	—	1	—	4·7	1·9	16·0	152	—	6	4·8	7·6	18·2
TOTAL — DISEASES OF EAR AND NOSE	202	—	35	9·0	11·1	20·2	98	—	12	4	10·8	6·5	24·1	300	—	39	9·5	17·6	21·5
Diseases of the Circulatory System.																			
Endocarditis, acute	1	1	—	0·0	0·3	104·0	—	—	—	—	—	—	—	1	1	—	0·0	0·3	104·0
Valvular disease of the heart	12	—	6	0·5	0·9	28·2	6	—	4	2	0·7	1·4	84·8	18	—	8	0·6	2·3	47·1
Disease of myocardium	4	2	1	0·2	0·3	30·5	—	—	—	—	—	—	—	4	2	1	0·1	0·3	30·5
Disordered action of the heart	32	—	1	1·4	1·7	19·8	37	—	5	1	4·1	4·0	39·5	69	—	2	2·2	5·7	30·4

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TABLE XI.—NOSOLOGICAL TABLE FOR THE UNITED KINGDOM, ABROAD, AND THE TOTAL FORCE, 1924—*cont.*

Disease.	United Kingdom. Average Strength, 22,559.						Abroad. Average Strength, 9,063.							Total Force. Average Strength, 31,622.					
	No. of cases.	No. of deaths.	No. finally invalided.	Ratio of cases per 1,000 of strength.	Averages.		No. of cases.	No. of deaths.	No. invalided to United Kingdom.	No. finally invalided.	Ratio of cases per 1,000 of strength.	Averages.		No. of cases.	No. of deaths.	No. finally invalided.	Ratio of cases per 1,000 of strength.	Averages.	
					No. sick daily.	Duration of case.						No. sick daily.	Duration of case.					No. sick daily.	Duration of case.
Diseases of the Circulatory System—cont.						Days.							Days.						Days.
Varix	8	—	—	0·4	0·6	28·0	3	—	—	—	0·3	0·3	33·3	11	—	—	0·3	0·9	29·5
Other diseases of the circulatory system	10	—	—	0·4	1·0	35·1	10	—	3	1	1·1	1·5	53·3	20	—	1	0·6	2·4	44·2
TOTAL — DISEASES OF THE CIRCULATORY SYSTEM	67	3	8	3·0	4·8	26·5	56	—	12	4	6·2	7·1	46·5	123	3	12	3·9	12·0	35·6
Diseases of lymphatic system and ductless glands	5	—	1	0·2	0·2	16·4	3	—	1	1	0·3	0·2	28·3	8	—	2	0·3	0·5	21·0
Diseases of the Respiratory System.																			
Bronchitis	193	—	6	8·6	6·9	13·1	85	—	1	—	9·4	2·9	12·4	278	—	6	8·8	9·8	12·9
Asthma	12	—	2	0·5	0·6	17·3	4	—	1	1	0·4	0·7	67·2	16	—	3	0·5	1·3	29·8

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Broncho-pneumonia	11	—	—	0·5	0·8	27·3	5	1	—	—	0·6	0·5	33·0	16	1	—	0·5	1·3	29·1
Pleurisy	78	3	3	3·5	7·1	33·2	21	—	3	—	2·3	2·2	38·5	99	3	3	3·1	9·3	34·3
Other diseases of the respiratory system	38	1	4	1·7	1·9	18·3	23	1	—	—	2·5	0·6	9·6	61	2	4	1·9	2·5	15·0
TOTAL — DISEASES OF THE RESPIRATORY SYSTEM	332	4	15	14·7	17·3	19·0	138	2	5	1	15·2	6·9	18·2	470	6	16	14·9	24·1	18·8
Disease of teeth and gums	53	—	—	2·4	1·1	7·6	14	—	1	—	1·5	0·6	14·7	67	—	—	2·1	1·7	9·1
Diseases of the Digestive System.																			
Hypertrophy of tonsils	81	—	—	3·6	4·7	21·3	13	—	—	—	1·4	1·0	26·9	94	—	—	3·0	5·7	22·1
Gastritis, acute	17	—	—	0·8	0·4	8·5	7	—	—	—	0·8	0·2	8·3	24	—	—	0·8	0·6	8·4
Gastritis, chronic	18	—	2	0·8	1·6	32·7	2	—	2	—	0·2	0·7	131·5	20	—	2	0·6	2·3	42·5
Dyspepsia	97	—	—	4·3	2·8	10·4	41	—	—	—	4·5	0·8	7·0	138	—	—	4·4	3·5	9·4
Appendicitis	124	—	—	5·5	9·3	27·4	49	1	2	—	5·4	5·1	38·1	173	1	—	5·5	14·4	30·4
Hernia	67	—	1	3·0	4·8	26·3	17	—	—	—	1·9	2·1	45·8	84	—	1	2·7	6·9	30·2
Constipation	111	—	—	4·9	2·0	6·6	81	—	—	—	8·9	1·6	7·2	192	—	—	6·1	3·6	6·8
Colic	25	—	—	1·1	0·4	6·3	20	—	—	—	2·2	0·5	9·0	45	—	—	1·4	0·9	7·5
Hæmorrhoids	50	—	—	2·2	2·1	15·7	37	—	—	—	4·1	2·1	21·0	87	—	—	2·8	4·3	17·9
Jaundice	23	—	—	1·0	1·3	21·3	56	—	—	—	6·2	3·1	20·0	79	—	—	2·5	4·4	20·3
Other diseases of digestive system	49	2	4	2·2	3·8	28·0	63	2	2	2	7·0	4·7	27·0	112	4	6	3·5	8·4	27·5
TOTAL — DISEASES OF THE DIGESTIVE SYSTEM	662	2	7	29·3	33·2	18·4	386	3	6	2	42·6	21·8	20·6	1,048	5	9	33·1	55·0	19·2
Diseases due to disorders of nutrition or metabolism	7	1	3	0·3	0·6	33·1	2	—	—	—	0·2	0·1	17·5	9	1	3	0·3	0·7	29·7

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TABLE XI.—NOSOLOGICAL TABLE FOR THE UNITED KINGDOM, ABROAD, AND THE TOTAL FORCE, 1924—*cont.*

Disease.	United Kingdom. Average Strength, 22,559.						Abroad. Average Strength, 9,063.							Total Force. Average Strength, 31,622.					
	No. of cases.	No. of deaths.	No. finally invalided.	Ratio of cases per 1,000 of strength.	Averages.		No. of cases.	No. of deaths.	No. invalided to United Kingdom.	No. finally invalided.	Ratio of cases per 1,000 of strength.	Averages.		No. of cases.	No. of deaths.	No. finally invalided.	Ratio of cases per 1,000 of strength.	Averages.	
					No. sick daily.	Duration of case.						No. sick daily.	Duration of case.					No. sick daily.	Duration of case.
Diseases of the Generative System.						Days.							Days.						Days.
Phimosis	24	—	—	1·1	1·3	19·5	22	—	—	—	2·4	1·4	22·5	46	—	—	1·5	2·6	20·9
Varicocele	13	—	—	0·6	1·0	27·6	3	—	—	—	0·3	0·5	57·3	16	—	—	0·5	1·5	33·2
Other diseases of the generative system	107	—	—	4·7	6·6	22·5	74	—	—	—	8·2	4·6	22·8	181	—	—	5·7	11·2	22·6
TOTAL — DISEASES OF THE GENERATIVE SYSTEM	144	—	—	6·4	8·8	22·4	99	—	—	—	10·9	6·4	23·8	243	—	—	7·7	15·3	23·0
Diseases of Organs of Locomotion.																			
Diseases of the bone	13	—	9	0·6	1·0	29·0	7	—	1	—	0·8	0·8	41·9	20	—	9	0·6	1·8	33·5
Diseases of the joints	131	—	10	5·8	7·6	21·1	53	—	4	1	5·9	4·8	33·5	184	—	11	5·8	12·4	24·7
Myalgia and lumbago	93	—	1	4·1	2·1	8·2	72	—	—	—	7·9	1·5	7·5	165	—	1	5·2	3·6	7·9
Diseases of muscles, tendons and bursæ	39	—	1	1·7	2·0	18·4	9	—	1	1	1·0	0·6	24·6	48	—	2	1·5	2·6	19·5
Deformities of limbs	52	—	11	2·3	2·8	19·4	8	—	1	1	0·9	1·0	43·4	60	—	12	1·9	3·7	22·6
TOTAL — DISEASES OF ORGANS OF LOCOMOTION	328	—	32	14·5	15·4	17·2	149	—	7	3	16·4	8·7	21·3	477	—	35	15·1	24·1	18·5
Diseases of areolar tissue and skin	338	—	—	15·0	15·0	16·2	111	—	5	—	12·2	7·6	25·1	449	—	—	14·2	22·6	18·4

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Diseases of Urinary Organs.																			
Nephritis	3	—	1	0·1	0·9	109·3	6	—	5	1	0·7	2·4	144·2	9	—	2	0·3	3·3	132·6
Incontinence of urine	8	—	2	0·4	0·5	24·6	1	—	—	—	0·1	0·0	13·0	9	—	2	0·3	0·6	23·3
Other diseases of urinary organs	34	1	2	1·5	1·9	20·9	25	—	1	—	2·8	1·6	23·8	59	1	2	1·9	3·6	22·1
TOTAL — DISEASES OF URINARY ORGANS	45	1	5	2·0	3·4	27·5	32	—	6	1	3·5	4·0	46·0	77	1	6	2·4	7·4	35·2
Tumours and Cysts.																			
Tumours, non-malignant	21	—	—	0·9	1·6	27·5	19	—	—	—	2·1	1·2	23·4	40	—	—	1·3	2·8	25·5
Tumours, malignant	2	2	1	0·1	0·4	66·0	—	—	—	1	—	0·2	—	2	2	2	0·1	0·5	98·5
Cysts	47	—	—	2·1	1·4	10·7	10	—	—	—	1·1	0·3	11·1	57	—	—	1·8	1·7	10·8
TOTAL—TUMOURS AND CYSTS	70	2	1	3·1	3·3	17·4	29	—	—	1	3·2	1·7	21·4	99	2	2	3·1	5·0	18·5
Poisons.																			
Effects of alcohol	6	—	—	0·3	0·2	11·3	5	—	—	—	0·5	0·2	12·4	11	—	—	0·3	0·4	11·8
Other poisons	—	—	—	—	—	—	32	—	—	—	3·5	1·4	15·7	32	—	—	1·0	1·4	15·7
TOTAL—POISONS	6	—	—	0·3	0·2	11·3	37	—	—	—	4·1	1·5	15·2	43	—	—	1·4	1·7	14·7
No appreciable disease	30	—	—	1·3	0·7	8·9	7	—	—	—	0·8	0·1	7·7	37	—	—	1·2	0·9	8·7
Debility	38	—	—	1·7	1·4	13·7	30	—	4	—	3·3	2·0	24·8	68	—	—	2·2	3·5	18·6
*TOTAL—ALL DISEASES	7,295	23	231	323·4	323·5	16·2	5,060	18	144	53	558·4	265·7	19·2	12,355	41	284	390·7	589·0	17·5

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TABLE XI.—NOSOLOGICAL TABLE FOR THE UNITED KINGDOM, ABROAD, AND THE TOTAL FORCE, 1924—*cont.*

Disease.	United Kingdom. Average Strength, 22,559.						Abroad. Average Strength, 9,063.							Total Force. Average Strength, 31,622.					
	No. of cases.	No. of deaths.	No. finally invalided.	Ratio of cases per 1,000 of strength.	Averages.		No. of cases.	No. of deaths.	No. invalided to United Kingdom.	No. finally invalided.	Ratio of cases per 1,000 of strength.	Averages.		No. of cases.	No. of deaths.	No. finally invalided.	Ratio of cases per 1,000 of strength.	Averages.	
					No. sick daily.	Duration of case.						No. sick daily.	Duration of case.					No. sick daily.	Duration of case.
**General Injuries.*						Days.							Days.						Days.
Burns and scalds	8	5	—	0·4	0·1	3·0	20	7	4	—	2·2	2·7	48·5	28	12	—	0·9	2·7	35·5
Heatstroke, sunstroke and heat exhaustion	—	—	—	—	—	—	42	2	2	—	4·6	2·0	17·2	42	2	—	1·3	2·0	17·2
Drowning	3	3	—	0·1	—	—	3	3	—	—	0·3	—	—	6	6	—	0·2	—	—
Multiple minor injuries	62	—	—	2·7	2·1	12·6	27	—	—	—	3·0	1·1	15·3	89	—	—	2·8	3·3	13·4
Multiple fractures	36	30	—	1·6	1·7	17·5	23	18	4	1	2·5	2·5	39·9	59	48	1	1·9	4·2	26·2
Gunshot wounds	—	—	—	—	—	—	1	—	—	—	0·1	0·1	24·0	1	—	—	0·0	0·1	24·0
Multiple wounds	5	2	—	0·2	0·3	19·6	4	3	—	—	0·4	0·2	16·5	9	5	—	0·3	0·4	18·2
Others	2	—	—	0·1	0·1	18·0	—	—	—	—	—	—	—	2	—	—	0·1	0·1	18·0
*TOTAL—GENERAL INJURIES	116	40	—	5·1	4·3	13·5	120	33	10	1	13·2	8·5	26·0	236	73	1	7·5	12·8	19·8
Local Injuries.																			
(i) Head and Neck :																			
Contusions and wounds	128	—	—	5·7	3·3	9·4	42	—	—	—	4·6	1·2	10·5	170	—	—	5·4	4·5	9·7
Gunshot wounds	—	—	—	—	—	—	2	2	—	—	0·2	—	—	2	2	—	0·1	—	—
Burns and scalds	11	—	—	0·5	0·2	7·5	3	—	—	—	0·3	0·1	12·3	14	—	—	0·4	0·3	8·5
Fracture of skull	30	16	—	1·3	2·5	30·4	5	2	1	1	0·6	0·7	50·6	35	18	1	1·1	3·2	33·3

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Concussion of brain	50	1	—	2·2	2·1	15·2	23	—	4	—	2·5	2·1	33·3	73	1	—	2·3	4·2	20·9
Other fractures	11	—	—	0·5	0·6	20·5	2	—	—	—	0·2	0·2	36·0	13	—	—	0·4	0·8	22·8
Other injuries	21	1	3	0·9	1·0	16·9	22	1	—	—	2·4	1·4	22·5	43	2	3	1·4	2·3	19·8
Total—Head and Neck	251	18	3	11·1	9·7	14·1	99	5	5	1	10·9	5·6	20·9	350	23	4	11·1	15·3	16·0
(ii) Trunk :																			
Contusions and wounds	44	1	—	2·0	1·7	14·3	21	1	—	—	2·3	0·5	9·6	65	2	—	2·1	2·3	12·7
Gunshot wounds	—	—	—	—	—	—	8	1	—	1	0·9	1·2	55·6	8	1	1	0·3	1·2	55·6
Fractures	8	1	—	0·4	0·8	36·8	4	—	—	—	0·4	0·2	22·0	12	1	—	0·4	1·0	31·8
Other injuries	24	1	—	1·1	0·6	9·3	8	1	—	—	0·9	0·3	12·4	32	2	—	1·0	0·9	10·0
Total—Trunk	76	3	—	3·4	3·1	15·0	41	3	—	1	4·5	2·3	20·3	117	6	1	3·7	5·4	16·9
(iii) Upper Extremity :																			
Contusions and wounds	136	—	—	6·0	4·4	11·9	81	—	1	1	8·9	4·2	18·9	217	—	1	6·9	8·6	14·5
Gunshot wounds	—	—	—	—	—	—	6	—	—	—	0·7	0·7	44·0	6	—	—	0·2	0·7	44·0
Burns and scalds	17	—	—	0·8	0·7	14·5	6	—	—	—	0·7	0·3	16·0	23	—	—	0·7	1·0	14·9
Fractures	115	—	4	5·1	10·1	32·0	62	—	4	2	6·8	7·9	46·9	177	—	6	5·6	18·0	37·2
Dislocations	23	—	—	1·0	1·5	24·0	7	—	—	—	0·8	0·3	17·0	30	—	—	0·9	1·8	22·4
Sprains	21	—	—	0·9	0·5	8·9	12	—	—	—	1·3	0·4	10·9	33	—	—	1·0	0·9	9·6
Other injuries	10	—	—	0·4	0·4	13·3	3	—	—	—	0·3	0·1	11·7	13	—	—	0·4	0·5	12·9
(iv) Total — Upper Extremity	322	—	4	14·3	17·5	20·0	177	—	5	3	19·5	13·9	28·7	499	—	7	15·8	31·4	23·1
(v) Total — Hand and Wrist	161	—	1	7·1	6·7	15·2	102	—	1	1	11·3	5·6	20·1	263	—	2	8·3	12·3	17·2
(vi) Total—Rest of limb	161	—	3	7·1	10·8	24·6	75	—	4	2	8·3	8·2	40·4	236	—	5	7·5	19·1	29·6
(vii) Lower Extremity :																			
Contusions and wounds	219	—	—	9·7	6·7	11·3	96	—	1	—	10·6	3·2	12·1	315	—	—	10·0	9·9	11·5
Gunshot wounds	—	—	—	—	—	—	5	—	—	—	0·6	0·2	16·8	5	—	—	0·2	0·2	16·8
Burns and scalds	10	—	—	0·4	0·4	15·5	6	—	—	—	0·7	0·3	16·8	16	—	—	0·5	0·7	16·0
Fractures	68	—	2	3·0	14·7	79·3	18	—	3	1	2·0	3·7	76·1	86	—	3	2·7	18·5	78·6
Dislocations	2	—	—	0·1	0·2	27·5	2	—	—	—	0·2	0·2	41·0	4	—	—	0·1	0·4	34·3

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TABLE XI.—NOSOLOGICAL TABLE FOR THE UNITED KINGDOM, ABROAD, AND THE TOTAL FORCE, 1924—*cont.*

Disease.	United Kingdom. Average Strength, 22,559.						Abroad. Average Strength, 9,063.							Total Force. Average Strength, 31,622.					
	No. of cases.	No. of deaths.	No. finally invalided.	Ratio of cases per 1,000 of strength.	Averages.		No. of cases.	No. of deaths.	No. invalided to United Kingdom.	No. finally invalided.	Ratio of cases per 1,000 of strength.	Averages.		No. of cases.	No. of deaths.	No. finally invalided.	Ratio of cases per 1,000 of strength.	Averages.	
					No. sick daily.	Duration of case.						No. sick daily.	Duration of case.					No. sick daily.	Duration of case.
						Days.							Days.						Days.
Sprains	275	—	—	12·2	9·7	13·0	107	—	—	—	11·8	3·3	11·1	382	—	—	12·1	13·0	12·4
Other injuries	205	—	—	9·1	8·3	14·8	89	—	—	—	9·8	4·2	17·2	294	—	—	9·3	12·5	15·6
(viii) Total — Lower Extremity	779	—	2	34·5	40·1	18·8	323	—	4	1	35·6	15·1	17·1	1,102	—	3	34·8	55·2	18·3
(ix) Total — Foot and ankle	310	—	—	13·7	8·8	10·4	140	—	1	—	15·4	4·1	10·8	450	—	—	14·2	12·9	10·5
(x) Total—Knee	254	—	—	11·3	12·3	17·7	99	—	—	—	10·9	4·5	16·6	353	—	—	11·2	16·8	17·4
(xi) Total—Rest of limb	215	—	2	9·5	19·0	32·3	84	—	3	1	9·3	6·2	26·9	299	—	3	9·5	25·2	30·8
*TOTAL — ALL LOCAL INJURIES	1,428	21	9	63·3	70·4	18·0	640	8	14	6	70·6	36·9	21·1	2,068	29	15	65·4	107·2	19·0
*TOTAL—ALL INJURIES	1,544	61	9	68·4	74·6	17·7	760	41	24	7	83·9	45·4	21·9	2,304	102	16	72·9	120·0	19·1
*TOTAL—ALL DISEASES	7,295	23	231	323·4	323·5	16·2	5,061	18	144	53	558·4	265·7	19·2	12,356	41	284	390·7	589·0	17·5
*TOTAL—ALL DISABILITIES	8,839	84	240	391·8	398·1	16·5	5,820	59	168	60	642·3	310·9	19·6	14,659	143	300	463·6	709·0	17·7

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Table XII.—Nosological Table of Communicable Diseases by Geographical Areas, 1924.

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TABLE XII.—NOSOLOGICAL TABLE OF COMMUNICABLE

Disease.	United Kingdom. Average strength, 22,559.					Mediterranean Littoral. Average strength, 3,491.					
	Ratio per 1,000 of average strength.			Averages.		Ratio per 1,000 of average strength.				Averages.	
	Cases.	Deaths.	Finally invalided.	No. sick daily.	Duration of case.	Cases.	Deaths.	Invalided to United Kingdom.	Finally invalided.	No. sick daily.	Duration of case.
Communicable Diseases.											
Dysentery—					Days.						Days.
Clinical, primary	—	—	—	—	—	1·1	—	—	—	0·2	20·5
„ recurrent	—	—	—	—	—	0·6	—	—	—	0·0	8·5
Bacillary, primary	—	—	—	—	—	0·6	—	—	—	0·2	43·5
„ recurrent	—	—	—	—	—	0·3	—	—	—	0·0	16·0
Amœbic, primary	—	—	—	—	—	3·7	—	—	—	0·9	25·6
„ recurrent	0·2	—	—	0·5	42·5	1·4	—	0·86	—	0·9	63·4
TOTAL—Dysentery	0·2	—	—	0·5	42·5	7·7	—	0·86	—	2·3	31·6
Enteric fever	0·1	—	—	0·1	24·0	0·3	0·29	—	—	0·1	20·0
Paratyphoid	—	—	—	—	—	—	—	—	—	—	—
Enteritis	6·2	—	—	3·5	9·3	28·9	—	-	—	2·2	8·1
Influenza	47·1	—	—	26·0	9·0	3·4	—	—	—	0·2	7·5
Malaria—											
Clinical, primary	—	—	—	—	—	4·3	—	—	—	0·4	9·0
„ recurrent	1·2	—	—	0·7	10·3	3·4	—	—	—	0·3	8·6
Benign tertiary, primary	—	—	—	—	—	4·3	—	—	—	0·5	13·3
„ „ recurrent	3·2	—	—	1·9	9·7	14·0	—	0·29	—	1·2	9·3
Quartan, primary and recurrent	—	—	—	—	—	0·3	—	—	—	0·0	12·0
Malignant tertian, primary	—	—	—	—	—	2·0	—	0·29	—	0·3	14·7
„ „ recurrent	0·0	—	—	0·0	10·0	1·7	—	—	—	0·3	15·5
Cachexia	0·0	—	—	0·0	9·0	0·6	—	0·29	—	0·3	54·5
TOTAL—Malaria	4·4	—	—	2·7	9·8	30·7	—	0·86	—	3·3	11·3
Pyrexia of unknown origin	1·8	—	—	0·8	7·4	4·6	—	—	—	0·7	16·1
Sandfly fever	—	—	—	—	—	36·4	—	—	—	2·5	7·3
Scabies	3·9	—	—	2·2	9·0	2·6	—	—	—	0·2	7·3
Tuberculosis	1·6	0·18	1·33	7·1	71·9	2·3	0·57	1·72	2·86	2·7	123·6
Upper air passage infections	69·1	—	—	31·8	7·5	86·2	—	—	—	5·2	6·4
Venereal disease, primary	13·3	—	0·09	42·9	52·5	32·1	—	0·28	—	18·2	59·5
„ „ other	5·9	—	0·17	16·5	45·4	7·2	—	0·57	—	5·0	73·9
TOTAL—Venereal disease	19·2	—	0·27	59·3	50·3	39·2	—	0·86	—	23·2	62·1
Other communicable diseases	23·9	0·13	0·17	29·9	20·3	16·0	0·28	0·28	—	3·4	21·9
Other diseases	146·0	0·71	8·47	159·6	17·7	172·2	0·57	11·17	3·15	35·8	21·8
TOTAL—All diseases	323·4	1·02	10·24	323·5	16·2	430·5	1·72	1·58	6·02	81·9	20·0
Injuries:—											
General injuries	5·1	1·77	—	4·3	13·5	8·0	1·72	0·29	—	1·1	14·1
Local injuries	63·3	0·93	0·40	70·4	18·0	54·7	0·86	1·43	0·86	9·6	18·4
TOTAL—All injuries	68·4	2·70	0·40	74·6	17·7	62·7	2·58	1·72	0·86	10·7	17·9
TOTAL—All disabilities	391·8	3·72	10·64	398·1	16·5	493·3	4·30	17·47	6·88	92·6	19·7

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Diseases by Geographical Areas, 1924.

Iraq. Average strength, 3,660.						India. Average strength, 1,912.						Total. Average strength, 31,622.				
Ratio per 1,000 of average strength.				Averages.		Ratio per 1,000 of average strength.				Averages.		Ratio per 1,000 of average strength.			Averages.	
Cases.	Deaths.	Invalided to United Kingdom.	Finally invalided.	No. sick daily.	Duration of case.	Cases.	Deaths.	Invalided to United Kingdom.	Finally invalided.	No. sick daily.	Duration of case.	Cases.	Deaths.	Finally invalided.	No. sick daily.	Duration of case.
					Days.						Days.					Days.
1·1	—	—	—	0·8	20·1	—	—	—	—	—	—	0·6	—	—	1·1	20·2
0·5	—	—	—	0·1	9·5	—	—	—	—	—	—	0·1	—	—	0·1	9·0
—	—	—	—	—	—	0·5	—	—	—	0·2	73·0	0·1	—	—	0·4	53·3
—	—	—	—	—	—	—	—	—	—	—	—	0·0	—	—	0·0	16·0
22·4	—	3·01	—	16·1	71·8	2·1	—	—	—	0·3	23·8	3·1	—	—	17·3	63·8
5·2	—	0·82	—	3·2	61·4	1·6	—	0·52	—	0·7	83·0	1·0	—	—	5·2	61·4
32·2	—	3·83	—	20·1	62·5	4·2	—	0·52	—	1·1	52·1	5·0	—	—	24·1	56·2
3·8	0·82	0·27	—	2·5	66·0	—	—	—	—	0·1	—	0·5	0·13	—	2·8	61·1
0·5	—	—	—	0·5	84·5	1·6	—	—	—	0·5	66·7	0·2	—	—	1·0	73·8
43·2	—	—	—	2·9	6·8	15·7	—	—	—	0·6	7·5	13·5	—	—	9·3	8·0
9·8	—	—	—	0·9	9·0	1·6	—	—	—	0·1	6·7	35·2	—	—	27·2	8·9
14·5	—	—	—	1·4	9·5	7·3	—	—	—	0·3	8·6	2·6	—	—	2·1	9·3
10·9	—	—	—	0·9	8·1	9·4	—	—	—	0·3	7·1	3·0	—	—	2·2	8·6
37·4	—	—	—	4·2	11·2	65·4	—	0·52	—	3·2	9·4	8·8	—	—	7·9	10·5
79·2	—	1·09	—	7·9	10·0	128·1	—	0·52	—	7·7	11·5	20·7	—	—	18·8	10·5
0·3	—	—	—	0·1	23·0	—	—	—	—	—	—	0·1	—	—	0·1	17·5
1·1	—	0·27	—	0·5	43·8	8·9	—	—	—	0·7	15·5	0·9	—	—	1·5	19·3
1·4	0·27	0·27	—	0·4	26·8	6·3	—	—	—	0·3	9·7	0·8	0·03	—	1·0	14·7
—	—	—	—	0·1	—	3·1	—	—	—	1·3	78·5	0·3	—	—	1·7	69·6
144·8	0·27	1·64	—	15·4	10·6	228·6	—	1·05	—	13·9	11·6	37·1	0·03	—	35·3	11·0
1·9	—	—	—	0·3	16·7	2·1	—	—	—	0·1	7·7	2·2	—	—	1·9	10·4
139·1	—	—	—	9·3	6·7	43·9	—	—	—	1·7	7·4	22·8	—	—	13·5	6·9
0·3	—	—	—	0·0	5·0	—	—	—	—	—	—	3·1	—	—	2·4	8·8
2·0	—	1·37	1·64	2·5	130·7	2·1	0·52	—	1·04	1·4	130·0	1·8	0·22	1·52	13·7	91·1
54·6	—	—	—	4·5	8·2	39·7	—	—	—	1·6	8·0	67·5	—	—	43·2	7·4
16·1	—	—	—	9·6	59·5	23·0	—	—	—	5·9	48·7	16·3	—	0·06	76·5	54·5
6·8	—	—	—	3·5	51·8	3·7	—	0·52	—	1·8	92·4	6·0	—	0·13	26·8	51·7
23·0	—	—	—	13·1	57·2	26·7	—	0·52	—	7·6	54·7	22·3	—	0·19	103·3	53·8
12·8	0·27	—	—	3·7	29·0	9·9	—	0·52	—	1·7	33·1	20·9	0·16	0·13	38·7	21·4
12·0	**1·09**	**10·98**	**4·37**	**59·0**	**27·9**	182·5	**1·04**	**9·41**	**4·18**	**18·3**	**19·2**	158·8	**0·76**	**7·15**	272·8	**19·9**
680·3	**2·46**	**18·03**	**6·01**	**134·7**	**19·8**	558·6	**1·57**	**12·93**	**5·23**	**48·9**	**16·8**	390·7	**1·30**	**8·98**	589·0	**17·5**
18·0	4·10	2·46	0·27	6·8	37·7	13·6	6·28	—	—	0·6	9·0	7·5	2·31	0·03	12·8	19·8
87·2	0·82	2·46	0·82	19·8	22·7	68·0	1·05	—	—	7·5	21·1	65·4	0·92	0·47	107·2	19·0
105·2	4·92	4·92	1·10	26·6	25·3	81·6	7·32	—	—	8·1	19·1	72·9	3·23	0·51	120·0	19·1
785·5	**7·38**	**23·00**	**7·10**	**161·4**	**20·6**	**640·2**	**8·89**	**12·03**	**5·23**	**56·9**	**17·1**	**463·6**	**4·52**	**9·49**	**709·0**	**17·7**

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CHAPTER II.—THE HEALTH OF THE ROYAL AIR FORCE IN THE UNITED KINGDOM DURING 1924.

General.

1. Table I, page 1, shows details of sickness in the United Kingdom during 1924. The average figures over the three-year period 1921–1923 are also inserted for comparison. The average strength of the home force during 1924 was 22,559 and the total number of cases of disease and injury recorded was 19,605, equivalent to a case ratio of 869·1 per 1,000 of strength, compared with 975·1 in 1923. If, however, cases of 48 hours duration or less are excluded from the total, an increase of 37·5 per 1,000 of strength has occurred during 1924. The average duration of each case has increased from 7·3 days in 1923 to 8·2 days in 1924. Excluding 48-hours cases, a decrease of 1·4 days is noticed. The average number of days' sickness per head has remained unaltered, being 7·1 days during both years. If, however, 48-hours cases are excluded, a fractional increase has taken place during 1924. The final invaliding rate shows a reduction from 16·5 per 1,000 of strength in 1923 to 10·6 in 1924. The ratio of the number sick daily to the strength of the home force shows no change, being 19·5 per 1,000 of strength during both 1923 and 1924, but if 48-hours cases are omitted a fractional increase has been recorded in 1924. The death rate shows an increase from 2·7 per 1,000 of strength in 1923 to 3·7 during 1924. The increase in the sickness rate (48-hours cases excluded) was almost entirely due to an epidemic of a mild type of influenza which was confined to the early months of the year. Only sporadic cases of this disease were recorded during 1923.

2. Chart III, facing page 35, shows the monthly case incidence of sickness in ratios per 1,000 of strength in the United Kingdom during the period 1921–1924. Points of interest in the chart are—

(i) The general similarity of the graphs during the four years.

(ii) The peak in March, 1924, partly due to influenza and partly to upper air passage infections.

(iii) The preponderance of sickness during the early months of each year.

(iv) The influence of the leave period during August each year.

3. The year 1924 was dull and very wet, with a cool and cloudy summer. The outstanding meteorological features were a cold spell during the last three weeks of February and the

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To face page 35.

CHART III.

MONTHLY CASE INCIDENCE OF SICKNESS IN RATIOS PER 1000 OF STRENGTH IN THE UNITED KINGDOM IN 1921, 1922, 1923 AND 1924.

(CASES OF 48 HOURS DURATION ARE EXCLUDED.)

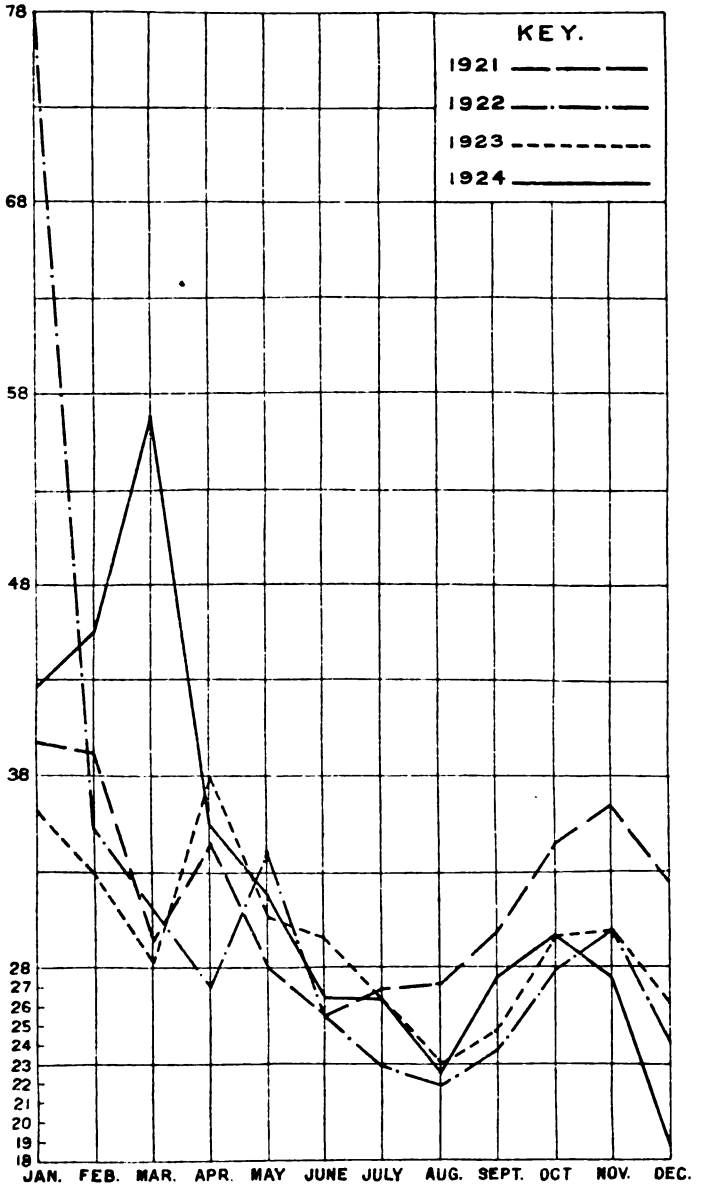

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TABLE XIII.—ANALYSIS BY AGE OF THE INCIDENCE OF CERTAIN DISEASES AMONGST AIRMEN AT HOME.

Age last birthday.	Average strength.	Case incidence per 1,000 of strength.									
		Impetigo.	Influenza.	Acute gastro-intestinal diseases.	Upper air passage infections.	Primary venereal diseases.	Respiratory diseases.	All other diseases.	All diseases.	All injuries.	All disabilities.
Under 18 -	2,363	41·9	121·5	5·1	173·5	0·4	14·4	196·4	553·1	58·4	611·5
18 and 19 -	3,153	18·7	54·2	11·4	87·8	3·5	14·9	156·7	347·3	66·0	413·3
20 and 21 -	4,169	13·0	31·9	12·5	67·2	18·0	14·2	145·4	302·0	50·6	352·6
22 and 23 -	4,676	6·8	32·5	14·3	54·7	21·0	11·8	162·7	303·9	76·6	380·6
24 and 25 -	2,043	5·4	36·7	19·6	51·9	29·4	15·7	168·4	327·0	80·8	407·7
26 and 27 -	1,147	5·2	23·5	11·3	48·8	16·6	14·8	154·3	274·6	69·7	344·4
28 and 29 -	868	2·3	28·8	10·4	44·9	16·1	20·7	139·4	262·7	64·5	327·2
30 to 34 -	1,089	1·8	25·7	11·0	23·9	12·9	12·9	108·4	205·7	46·8	252·5
35 and over	824	1·2	32·8	15·8	21·8	6·1	24·3	140·8	242·7	49·8	292·5
Total -	20,332	13·1	45·5	12·5	72·2	14·6	14·6	157·9	330·4	64·3	394·7

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Table XIV.—Analysis of Disease at Principal Stations at Home in 1924.

(This table relates to disease only; no injuries are included and all cases of less than 48 hours' duration are excluded.)

Station.	Strength.	Case incidence per 1,000 of strength.							
		Influenza.	Upper air passage infections.	Impetigo.	Respiratory diseases.	Acute gastro-intestinal diseases.	Primary venereal disease.	All other diseases.	All diseases.
Calshot	534	65·6	30·0	—	16·9	13·1	7·5	159·2	292·2
Cranwell	2,251	159·0	146·2	19·1	15·5	10·7	4·0	185·3	539·9
Duxford	533	82·6	28·1	7·5	16·9	20·6	28·1	118·3	302·1
Eastchurch	703	5·7	38·4	1·4	5·7	12·8	11·4	123·7	199·2
Flower Down	905	9·9	117·1	5·5	12·2	8·8	6·6	163·5	323·8
Gosport	580	39·7	29·3	6·9	15·5	1·7	20·7	98·3	212·1
Halton	3,149	47·0	107·1	35·6	16·8	7·9	4·8	203·5	422·7
Henlow	1,548	20·7	72·3	9·0	11·0	16·2	9·7	153·1	292·0
Kenley	516	155·1	40·7	5·8	17·4	9·7	11·6	118·3	358·6
Manston	1,386	25·3	98·1	9·4	23·1	22·4	25·2	186·2	389·6
Netheravon	643	42·0	23·3	1·6	12·4	31·1	9·4	136·9	256·6
Shotwick	584	17·1	34·3	18·8	6·8	15·4	12·0	107·8	212·3
Shrewsbury	539	20·4	20·4	—	7·4	11·1	24·1	74·2	157·7
Uxbridge	2,182	15·1	41·2	8·7	14·2	13·3	12·8	163·2	268·6
All other stations	6,506	32·7	47·0	6·0	14·9	14·4	18·4	133·8	267·3
Total	22,559	47·1	69·1	11·9	14·7	13·5	13·3	153·9	323·4

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first week of March, a brief spell of warm weather towards the end of April and some warm days in the latter half of June and near the middle of July, a wet cool summer with an unusual number of thunderstorms accompanied in many instances by very heavy falls of rain and hail which helped to constitute record values in many places, and the stormy weather accompanied by widespread thunder towards the end of December.

4. Table XIII, page 36, gives an analysis by age of disease and injury amongst airmen at home during 1924. Sickness amongst officers is not included in this table. The table shows the case incidence rate per 1,000 of strength for certain named diseases or groups of diseases in respect of each age group. The case incidence rates for all diseases, all injuries and all disabilities are also shown separately for each age group. From the table it will be seen that impetigo contagiosa was most commonly found amongst boys—*i.e.*, under 18 years of age, and that the incidence of this disease progressively decreased in each successive age group, till the minimum was reached in men over the age of 35. The highest influenzal rate, 121·5 per 1,000 of strength, also occurred amongst boys, and the next highest rate, 54·2, in the group of men aged 18 and 19 years. The rates in the remaining groups showed slight fluctuations. Acute gastro-intestinal diseases were infrequent amongst the younger age groups, the lowest incidence being found amongst boys. The incidence increased progressively in each age group till the maximum 19·6 per 1,000 was reached in the group aged 24 and 25. After the age of 25, slight variations occurred in the rates of the remaining groups. Upper air passage infections were commonest amongst boys, the incidence rate, 173·5, being almost double the next highest rate, 87·8, which occurred in the group of men aged 18 and 19. The incidence decreased in each succeeding age group. Primary venereal disease, as would be expected, was rare amongst the younger age groups; the lowest rate, 0·4 per 1,000, occurred amongst boys. The incidence progressively increased in each age group till the maximum was reached in the age group 24 and 25. After this age the incidence progressively decreased The figures for respiratory diseases show fluctuations from group to group. The highest incidence was found amongst the oldest men and the lowest among the group aged 22 or 23. No inference can be drawn from the injury rates as variations occur from group to group. The highest rates were found between the ages of 22 and 26, the lowest in men over the age of 30. Reference to the last column of the table where the total sickness rates are given shows that the greatest amount of sickness occurred amongst boys and that the figure for this group was almost 50 per cent. in excess of any of the remaining age groups. The lowest rates occurred among men in the age group 30 to 34.

5. Table XIV, page 37, gives an analysis of disease at each of the larger stations in the United Kingdom during 1924.

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Only stations whose average strength was 500 or over have been included in the table. Cases of less than 48 hours duration, and all cases of injury, have been omitted. Reference to the last column of the table, where the total disease rate for each station is given, shows that the highest disease ratio, 539·9 per 1,000 of strength, occurred at Cranwell. Halton came second with 422·7 per 1,000 of strength. Boys undergo their training at these stations and consequently the disease rates would be expected to be higher than at other stations. The rates at the remaining stations vary from 389·6 per 1,000 of strength at Manston to 157·7 at Shrewsbury. The incidence of influenza shows wide fluctuations, being highest at Cranwell, followed by Kenley. Upper air passage infections were most common at the stations where boys undergo training, Cranwell recording a case incidence rate of 146·2, Flower Down 117·1 and Halton 107·1. Cases of impetigo contagiosa occurred at all stations except Calshot and Shrewsbury. The highest case incidence, 35·6, was recorded at Halton and the next highest, 19·1, at Cranwell. The incidence of respiratory disease shows fluctuations between the stations, the highest incidence, 23·1, being recorded at Manston. This station also recorded the highest acute gastro-intestinal disease rate. It will be seen from the table that the incidence of primary venereal disease was highest at those stations situated near large towns or close to seaside resorts, and was lowest at the stations where boys undergo their training.

Diseases calling for special mention.

6. (i) *Influenza.*—A total of 1,062 cases, equivalent to a case ratio of 47·1 per 1,000 of strength occurred at home, compared with a case ratio of 16·0 during 1923. The average duration of each case was almost identical during the two years, being 9·0 days in 1924 compared with 9·1 in 1923. There were no deaths during 1924. Further reference is made to this disease in Chapter IV, page 69.

(ii) *Tinea cruris.*—A total of 88 cases was recorded during the year. Of the total, 80 cases were reported from Cranwell, 3 from Manston, 3 from Flower Down. The remaining cases occurred at Calshot and Digby. Further information regarding the Cranwell cases will be found in Chapter IV, page 69.

(iii) *Tonsillitis.*—A total of 508 cases, equivalent to a case ratio of 22·5 per 1,000 of strength occurred during 1924, compared with a case rate of 16·2 during 1923.

(iv) *Nasopharyngitis and pharyngitis.*—These two diseases accounted for a total of 989 cases, equal to a case ratio of 43·8, compared with 37·1 during 1923.

(v) *Scabies.*—The case incidence of this disease shows a progressive reduction during the past four years, being 3·9 per 1,000 of strength in 1924, compared with 7·3 in 1923, 8·4 in

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1922 and 14·3 in 1921. The average duration of each case shows a reduction of half a day compared with the figure for 1923.

(vi) *Impetigo contagiosa.*—The case incidence rate shows a reduction from 15·3 per 1,000 of strength in 1923 to 11·9 in 1924, the average duration of each case being reduced from 16·8 to 14·8 during the same period.

(vii) *Malaria.*—A total of 100 cases of recurrent malaria, giving a case incidence ratio of 4·4 per 1,000 of strength was recorded, compared with a corresponding rate of 2·9 during 1923. Details of the different types are shown in the nosological table, page 33.

(viii) *Scarlet fever.*—Twenty-four cases were recorded, compared with 60 in 1923.

(ix) *Enteric fever.*—Two cases were reported, one from Henlow and one from Gosport; in neither of the cases could the source of infection be traced.

(x) *Encephalitis lethargica.*—One case was reported from Flower Down in a youth aged 19.

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CHAPTER III.—THE HEALTH OF THE ROYAL AIR FORCE ABROAD.

General.

1. Table I, page 1, gives details of sickness in each of the geographical areas abroad as well as for the force abroad regarded as a whole. The average figures over the three-year period 1921–1923 are also included for comparison.

2. Compared with 1923, the force abroad shows a reduction in the admission rate, invalided to United Kingdom rate, average number of days' sickness per head, and in the ratio of the number sick daily. An increase is noticeable in the average duration of each case; including 48-hours cases, the increase amounted to 1·7 days; excluding these minor cases, to 2·1 days. The final invaliding rate shows a fractional increase, being 6·6 per 1,000 of strength during 1924, compared with 6·5 during 1923. The death rate has remained unaltered, being 6·5 per 1,000 of strength during both years.

3. Compared with the averages over the three-yearly period, it will be seen that the 1924 figures show a slight increase in the final invaliding rate and also in the average duration of each case in days. In all other respects the figures show a reduction.

4. Chart IV, facing page 41, shows the monthly case incidence of sickness in ratios per 1,000 of strength for the force abroad during 1921, 1922, 1923 and 1924. The chief features of interest in the chart are—

(i) The similarity of the graphs for each of the four years.

(ii) The peaks in the graphs, which occur each year during the summer months.

(iii) The reduction on previous years shown by the graph for 1924.

5. Chart V, facing page 44, further analyses sickness abroad and shows the monthly case incidence in ratios per 1,000 of strength in the Mediterranean Littoral, Iraq and India, during the same four years. Points of interest in the chart are—

(i) *Mediterranean Littoral.*—The reduction in sickness incidence shown during 1924 compared with previous years. The maximum incidence occurs each year in either July or August.

(ii) *India.*—The irregular outline of the graphs during the four years, the general tendency being to a peak in the spring months and again in the autumn. The spring peak occurs at the commencement of the hot weather, whilst that in the autumn is chiefly due to malaria.

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To face page 41.

Chart IV.

MONTHLY CASE INCIDENCE OF SICKNESS IN RATIOS PER 1,000 OF STRENGTH FOR THE FORCE ABROAD IN 1921, 1922, 1923 AND 1924.

(CASES OF 48 HOURS DURATION ARE EXCLUDED.)

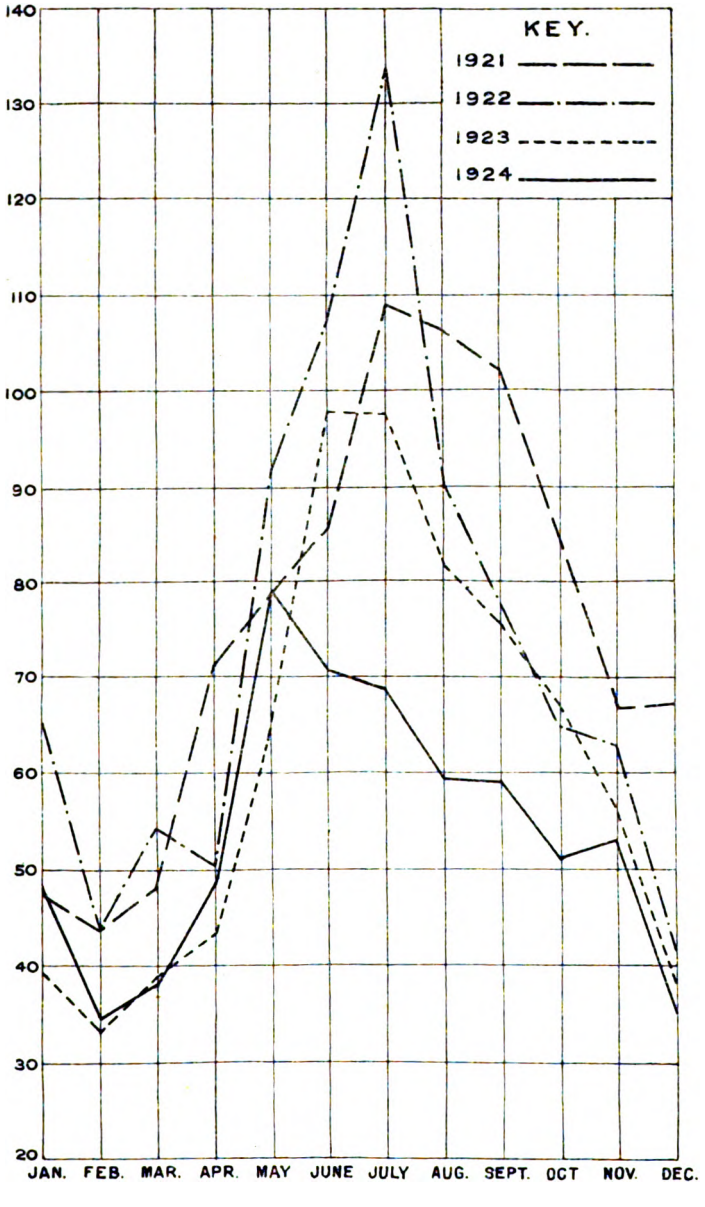

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CHART VI.

NCIDENCE OF SANDFLY FEVER IN PER 1,000 OF STRENGTH DURING 21, 1922, 1923 AND 1924.

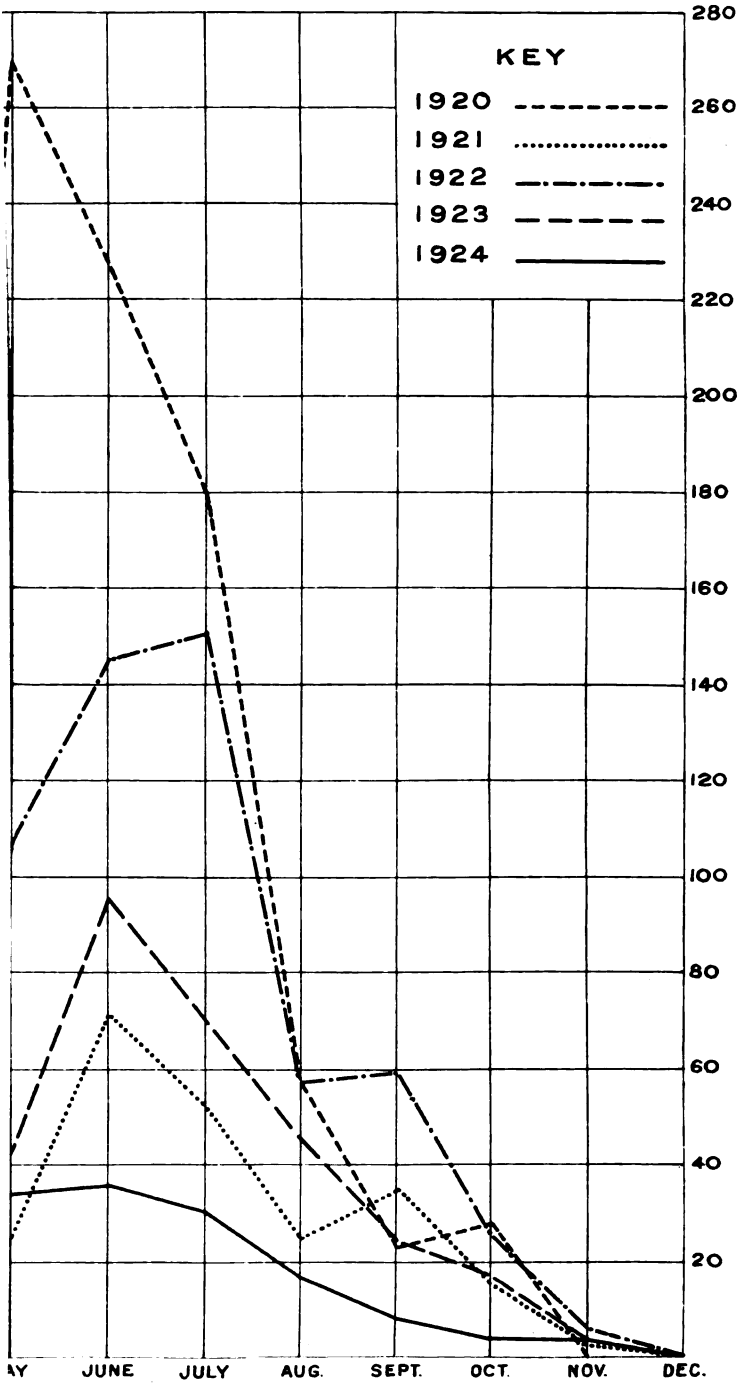

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TABLE XV.—ANALYSIS OF DISEASE AT PRINCIPAL STATIONS ABROAD IN 1924.

(This Table relates to disease only; no injuries are included and all cases of less than 48 hours' duration are excluded.)

Station.	Average strength.	Number of cases.						Percentage of total number of cases of disease at station.					Case incidence per 1,000 of strength.		
		Dysentery.	Sandfly.	Malaria.	Total dysentery, sandfly and malaria.	All other diseases.	Total all diseases.	Dysentery.	Sandfly.	Malaria.	Total dysentery, sandfly and malaria.	All other cases.	Sandfly, dysentery and malaria.	Other diseases over 48 hours.	Total all diseases over 48 hours.
Abbassia, Cairo and Heliopolis	704	2	10	4	16	272	288	0·7	3·6	1·4	5·7	94·3	22·7	386·4	409·1
Aboukir - -	609	1	5	29	35	174	209	0·5	2·4	13·9	16·8	83·2	57·5	285·7	343·2
Baghdad - -	363	7	52	15	74	91	165	4·2	31·5	9·1	44·8	55·2	203·9	250·7	454·6
Basrah, Magil and Makina -	579	10	19	399	428	198	626	1·6	3·0	63·7	68·3	31·7	739·2	342·0	1081·2
Hinaidi - -	1,989	78	254	46	378	754	1,132	6·9	22·4	4·1	33·4	66·6	190·0	379·6	569·6
Mosul - -	400	10	82	21	113	127	240	4·2	34·2	8·8	47·2	52·8	282·5	317·5	600·0
Karachi - -	632	—	32	68	100	153	253	—	12·7	26·9	39·6	60·4	158·2	242·1	400·3

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TABLE XVI.—ANALYSIS BY AGE OF THE INCIDENCE OF CERTAIN DISEASES AMONGST AIRMEN ABROAD.

Age last birthday.	Average strength.	Case incidence per 1,000 of strength.									
		Sandfly.	Dysentery.	Malaria.	Acute gastro-intestinal diseases.	Upper air passage infections.	Primary venereal diseases.	All other diseases.	All diseases.	All injuries.	All disabilities.
Under 20	79	*	*	*	*	*	*	*	*	*	*
20 and 21	2,059	68·0	12·6	100·5	41·0	49·5	23·5	159·3	454·2	56·8	510·9
22 and 23	2,964	85·0	16·9	139·0	41·2	67·2	26·7	214·9	590·8	86·4	677·1
24 and 25	1,080	96·3	15·7	142·6	63·0	88·9	41·7	272·2	720·4	84·3	804·6
26 and 27	529	87·0	22·7	157·0	47·3	62·4	28·4	211·7	616·3	104·0	720·2
28 and 29	396	85·9	15·2	154·0	60·6	70·7	17·7	191·9	596·0	103·6	699·5
30 to 34	534	59·9	20·6	78·7	48·7	46·8	15·0	249·1	518·7	73·0	591·8
35 and over	363	79·9	16·5	118·5	33·1	77·1	24·8	316·8	666·7	63·4	730·0
Total	8,004	80·0	16·0	125·3	45·0	64·3	26·5	212·0	569·1	78·0	647·1

* Not calculated : owing to small numbers involved.

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To face page 44.

MONTHLY CASE INCIDENC
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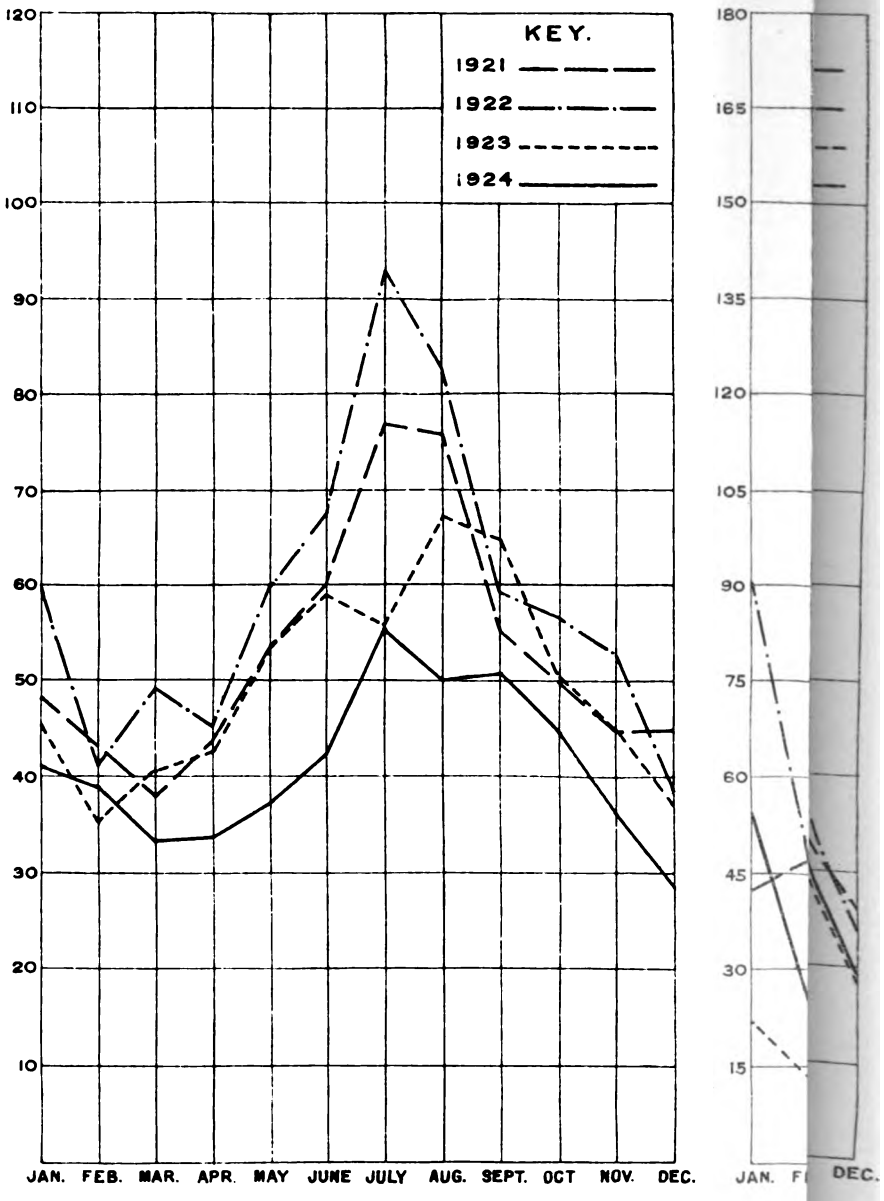

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(iii) *Iraq.*—The reduction in sickness shown by the 1924 graph compared with those for previous years. The peaks each year during the summer months, for which sandfly fever can be held largely responsible.

6.—(1) An analysis of disease at each of the principal stations abroad is given in table XV, page 42. This table shows under separate headings the number of cases of dysentery, sandfly fever, and malaria, and the total of these three diseases, compared with all other diseases recorded at the same station. The percentage of the total caused by any one of the named diseases is also given in respect of each station. From the table it will be seen that the Basrah station, as in previous years, heads the stations, with a disease rate of 1081·2 per 1,000 of strength. An analysis of this figure shows that sandfly fever, malaria and dysentery together gave an admission rate of 739·2 per 1,000 of strength compared with an admission rate of 342·0 for all other diseases. Sixty-four per cent. of all admissions at Basrah was due to malaria. Reference was made in the report for 1923 to the unsatisfactory local conditions which render preventive measures, other than personal, of little avail in this district. Further reference will be found in Chapter IV, page 74.

(ii) At Mosul, the disease rate amounted to 600·0 per 1,000 of strength; dysentery, malaria and sandfly fever combined accounting for an admission rate of 282·5 per 1,000 of strength compared with 317·5 for all other diseases. Sandfly fever accounted for 34 per cent. of the total admission for all diseases.

(iii) Hinaidi shows a disease admission rate of 569·6 per 1,000 of strength; the rate for sandfly fever, dysentery and malaria combined being 190·0 per 1,000 of strength compared with 379·6 for all other diseases.

(iv) At Baghdad, the admission rate was 454·6 per 1,000 of strength for all diseases; sandfly fever, dysentery and malaria accounting for an admission rate of 203·9 compared with 250·7 for all other diseases. Sandfly fever accounted for 32 per cent. of the total cases of disease at this station.

(v) In India, Karachi records a disease rate of 400·3 per 1,000 of strength, the three named diseases combined being responsible for an admission rate of 158·2 compared with 242·1 for all other diseases. Malaria alone accounted for 27 per cent. of the admission for all diseases at this station.

(vi) In Egypt, dysentery, malaria and sandfly fever account for a much lower proportion of the total cases due to disease than in either Iraq or India.

7. An analysis by age of the incidence of disease and injury amongst warrant officers, N.C.Os. and other airmen abroad is given in table XVI, page 43. This table shows the case incidence ratio per 1,000 of strength of certain diseases for each age group abroad, as well as the case incidence rate for injuries in the same age groups. The disease groups given have been chosen as either peculiar to service abroad, or as being the chief causes

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of medical non-effectiveness in the force overseas. In the age group under 20, the strength overseas (79) was considered too small to justify any detailed calculations. From the table it will be seen that the highest sickness incidence, 804·6 per 1,000 of strength occurs in the age group 24 and 25. Analysis of this rate shows that the highest sandfly fever rate, 96·3 per 1,000 of strength, acute gastro-intestinal disease 63·0, upper air passage infections 88·9, primary venereal disease 41·7 are found in this age group. The lowest amount of sickness abroad has occurred in the age group 20–21.

Diseases calling for Special Mention.

8. *Sandfly fever.*—Table XVII, page 46, shows the monthly case incidence of sandfly fever in each of the geographical areas abroad during 1924. The averages over the three-yearly period 1921–1923 are also inserted for comparison. The case incidence rate for the force abroad shows a reduction from 156·1 per 1,000 of strength in 1923 to 79·4 in 1924. The figure for 1924 is the lowest so far recorded. Dealing with the individual areas abroad, the case incidence at Malta shows a reduction from 137·2 per 1,000 of strength in 1923 to 32·1 in 1924. The average over the three-yearly period in this command was 149·3 per 1,000 of strength. In Egypt and Palestine the case incidence rate has been reduced from 97·6 in 1923 to 40·3 in 1924. The three-yearly average for this area was 83·0 per 1,000 of strength. A reduction has also taken place in Iraq, the case rate being 139·1 compared with 307·6 in 1923. The three-yearly average for this area was 377·3 per 1,000 of strength. The sole increase recorded occurred in India, where the case rate in 1924 was 43·9 as compared with 25·8 in 1923, the former figure being lower than the rate over the three-yearly period (79·9). Table XVIII, page 47, shows the case incidence of sandfly fever at stations in the various geographical areas abroad. In the Mediterranean Littoral the largest number of cases (42) occurred at Amman (Palestine) followed by Ludd and Sarafand (Palestine) with 32 cases. Of the total of 127 cases, only 23 occurred in Egypt. In Iraq, the largest number of cases, as in previous years, occurred at Hinaidi (254) Kirkuk–Kingerban being second with 100. In India, as in previous years, Karachi heads the stations with the greatest number of cases (32) followed by Peshawar with 22. Chart VI, facing page 42, shows the monthly case incidence of sandfly fever in Iraq in ratios per 1,000 of strength in each of the five years 1920–1924. Features of interest in the graph are—

(i) Omitting 1921, the steady reduction in case incidence from year to year.

(ii) The definite period of commencement (April) reaching a maximum in May, June or July and then gradually subsiding towards the end of the year.

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TABLE XVII.—MONTHLY CASE INCIDENCE OF SANDFLY FEVER ABROAD, 1924.

Month.	Malta (and Ships).			Egypt and Palestine.			Iraq.			India.		
	No. of cases, 1924.	Ratio per 1,000 of strength.		No. of cases, 1924.	Ratio per 1,000 of strength.		No. of cases, 1924.	Ratio per 1,000 of strength.		No. of cases, 1924.	Ratio per 1,000 of strength.	
		1924.	Average, 1921/2/3.		1924.	Average, 1921/2/3.		1924.	Average, 1921/2/3.		1924.	Average, 1921/2/3.
January	—	—	—	—	—	0·2	—	—	—	2	1·1	0·4
February	—	—	—	—	—	—	—	—	—	2	1·0	0·4
March	—	—	—	—	—	0·6	1	0·3	0·1	4	2·1	4·4
April	—	—	—	1	0·4	1·7	18	4·9	3·0	13	6·6	17·4
May	—	—	2·1	5	1·8	12·6	126	34·4	60·5	20	10·4	12·9
June	4	7·6	35·1	9	3·3	12·8	132	36·1	108·2	4	2·1	4·0
July	4	7·5	53·9	17	6·3	13·8	110	30·1	93·9	8	4·1	6·1
August	3	5·6	29·4	17	6·2	17·6	59	16·6	46·0	11	5·7	7·5
September	3	5·6	23·0	43	15·8	12·2	30	8·3	38·3	10	5·2	14·0
October	1	1·8	1·1	12	4·5	8·4	18	4·9	20·2	4	2·1	9·1
November	—	—	0·8	7	2·6	2·3	15	4·1	3·9	4	2·1	3·3
December	—	—	—	—	—	0·2	—	—	0·1	2	1·1	0·4
Total	15	32·1	149·3	111	40·3	83·0	509	139·1	377·3	84	43·9	79·9

Notes.—(1) In addition to the above, the following numbers of cases occurred amongst drafts en route: 1924, 1; 1923, 5; 1922, 6; 1921, 3.

(2) In 1923 there were 48 cases, not included above, at Constantinople.

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TABLE XVIII.—CASE INCIDENCE OF SANDFLY FEVER AND MALARIA AT STATIONS ABROAD, 1924.

Station.	Average strength.	No. of Cases.			
		Sandfly.	Malaria.		
			Primary.	Others.	All cases.
Mediterranean Littoral.					
Abbassia, Cairo and Heliopolis	704	10	1	3	4
Aboukir	609	5	13	16	29
Abu Sueir	440	5	3	3	6
Amman	131	42	1	5	6
Bir Salem	91	2	1	3	4
Helouan	145	—	—	1	1
Jerusalem	58	—	—	1	1
Malta and aircraft carriers	512	15	1	6	7
Ludd and Sarafand	230	32	3	3	6
Moascar	137	3	2	4	6
Ramleh	160	12	3	6	9
Various small stations and drafts en route	274	1	10	18	28
Total	3,491	127	38	69	107
Iraq.					
Baghdad	363	52	3	12	15
Basrah, Magil and Makina	579	19	135	264	399
Hinaidi	1,989	254	15	31	46
Kirkuk and Kingerban	177	100	22	11	33
Mosul	400	82	14	7	21
Shaibah	152	2	6	10	16
Total	3,660	509	195	335	530
India.					
Ambala	161	3	23	49	72
Dardoni	172	6	6	13	19
Karachi	632	32	39	29	68
Lahore	145	6	33	82	115
Lower Barian	130	—	6	18	24
Peshawar	152	22	8	37	45
Quetta	173	4	7	6	13
Risalpur	289	11	32	46	78
Various small stations	58	—	2	1	3
Total	1,912	84	156	281	437

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The Report on the Health of the Royal Air Force for the year 1922 contained a detailed description of the research work carried out by the R.A.F. Sandfly Fever Commission and summarised the prophylactic measures recommended as a result of that research. These measures have since been adopted in each command abroad, and the reduction in the incidence of the disease can be regarded as in some part attributable thereto.

9. *Malaria.*—Table XIX, page 50, shows the monthly case incidence of malaria in each of the geographical areas abroad. The table is divided to show primary cases as distinct from all other cases. The case rate for the force abroad as a whole has increased from 107·5 per 1,000 of strength in 1923 to 118·5 in 1924, although the primary rate has fallen from 60·3 in 1923 to 42·9 during 1924. In the individual areas the Mediterranean Littoral shows an increase from 26·5 in 1923 to 30·7 in 1924, the primary rate at the same time falling from 16·8 to 10·9. In Iraq, a reduction both in total case rate and primary case rate has been effected, the former falling from 151·2 to 144·8, the latter from 86·3 to 53·3. In India the case rate has increased from 202·0 in 1923 to 228·6 in 1924, although the primary rate shows a reduction from 106·5 to 81·6 during the same period. It will be seen from table XIX that the highest monthly case incidence was recorded both in the Mediterranean Littoral and in India during September. In Iraq, the highest incidence occurred during November. Detailed figures of the different types of malaria in each geographical command are shown in table XII, page 33. Table XVIII, page 47, shows the case incidence of malaria at stations in each of the geographical areas abroad. In the Mediterranean Littoral, 29 cases, of which 13 were primary, occurred at Aboukir. In Iraq, as in previous years, the largest number of cases occurred in the Basrah area, 399 cases of which 135 were primary, being reported from this locality. (*See also* chapter IV, page 74.) In India the largest number of cases, 115, of which 82 were primary cases, occurred at Lahore; a further 78 cases were recorded at Risalpur and 72 at Ambala.

10. *Dysentery.*—Table XX, page 51, shows the monthly case incidence of dysentery in each of the geographical areas abroad. The table is divided to show primary cases and all other cases under separate headings. The total case incidence rate has fallen from 21·5 in 1923 to 16·9 in 1924, the primary rate at the same time falling from 15·7 to 13·3 per 1,000 of strength. In the individual areas the Mediterranean Littoral shows a decrease in total case incidence, the figure for 1924 being 7·7 per 1,000 of strength compared with 15·3 in 1923, the primary rate showing a reduction from 11·4 to 5·5 at the same time. In India a reduction in both total case rate and primary rate was also recorded, the former being 4·2 per 1,000 of strength compared with 17·9 in 1923, the latter 2·6 compared with 8·4. In Iraq, the total case incidence rate has increased from 30·6 in 1923 to

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32·2 in 1924, and the primary rate has increased from 24·7 to 26·5 during the same period. (*See also* chapter IV, page 73.) Table XXI, page 53, shows the case incidence of dysentery at stations in each of the individual areas abroad during 1924. The table shows under separate headings the number of cases of clinical, bacillary and protozoal dysentery recorded at each station. Primary cases are also distinguished from all other cases. In the Mediterranean Littoral a total of 27 cases was reported; of these 6 occurred in Egypt and 21 in Palestine. No cases were reported from Malta. Of the individual stations in this area Ludd and Sarafand (Palestine) record the greatest number of cases (10). The prevailing type of the disease in the Mediterranean Littoral was protozoal, whilst in previous years the bacillary type predominated. In Iraq, a total of 118 cases was reported; of these 78 occurred at Hinaidi, where over half the personnel of this command are stationed. The prevailing type in this command as in previous years was protozoal, 101 of the total of 118 cases being protozoal in origin. Only 8 cases of dysentery were reported from India, these cases being scattered amongst 5 stations. The prevailing type in this command was also protozoal, only 1 case being bacillary in origin.

11. *Enteric group*, (i) *Enteric fever*.—A total of 15 cases of enteric fever, resulting in 4 deaths, occurred abroad during 1924, compared with 20 cases with 3 deaths in 1923. Of the 15 cases, 14 occurred in Iraq, and all were sporadic cases of isolated origin. Of the 14 cases, 3 occurred at Shaibah, 3 in the Basrah district, 2 at Hinaidi, 2 at Mosul, 2 at Baghdad, and 1 each at Kirkuk and Kingerban. Of the total of 14, 7 were stated to have been fully and 7 partially protected by prophylactic inoculation with T.A.B.C. The remaining case occurred in Egypt; no details of inoculation are available for this case.

(ii) *Paratyphoid "A."*—One case of paratyphoid "A" was reported during 1924 compared with 6 during 1923. The single case occurred in India; details of prophylactic inoculations were not recorded.

(iii) *Paratyphoid "B."*—Four sporadic cases of paratyphoid "B" occurred abroad during 1924 compared with 7 in 1923. Of the 4, 2 occurred in Iraq and 2 in India. Both the Iraq cases were stated to have been fully protected by inoculation; details of inoculation were not stated in respect of the cases in India.

12. *Smallpox*.—Three cases of smallpox were notified during 1924 compared with 4 in 1923. Two of the cases occurred in Iraq. The remaining case was reported from Egypt. All three were stated to have been recently vaccinated.

13. *Schistosomiasis*.—During 1924, 50 cases of Bilharziasis occurred abroad. Of the 50 cases, 46 occurred in Iraq, 3 in India and 1 in Egypt. Of the Iraq cases 44 were reported from Hinaidi. The 3 cases reported from India occurred in personnel

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TABLE XIX.—MONTHLY CASE INCIDENCE OF MALARIA ABROAD, 1924.

Command.	Mediterranean Littoral.		Iraq.		India.	
Month.	Primary Cases, No.	All Cases, No.	Primary Cases, No.	All Cases, No.	Primary Cases, No.	All Cases, No.
January	2	3	15	28	2	16
February	1	8	4	16	1	5
March	—	4	2	15	3	14
April	—	2	7	24	6	28
May	2	11	23	70	11	38
June	3	4	26	83	14	51
July	3	5	19	58	11	37
August	7	14	11	41	20	49
September	12	19	6	30	43	66
October	4	17	9	27	22	55
November	4	14	62	106	16	49
December	—	6	11	32	7	29
Total	38	107	195	530	156	437
Case incidence ratio per 1,000 of strength :—						
1924	10·9	30·7	53·3	144·8	81·6	228·6
Average, 1921/2/3	10·5	23·9	57·2	109·2	117·1	245·3

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TABLE XX.—MONTHLY CASE INCIDENCE OF DYSENTERY ABROAD, 1924.

Command.	Mediterranean Littoral.		Iraq.		India.	
Month.	Primary cases, No.	All cases, No.	Primary cases, No.	All cases, No.	Primary cases, No.	All cases, No.
January	1	1	8	8	—	—
February	—	—	—	2	—	—
March	—	1	3	3	1	1
April	1	1	9	12	2	3
May	1	2	12	16	—	—
June	1	1	19	21	—	—
July	2	2	7	9	—	—
August	5	7	10	11	—	—
September	2	2	7	7	1	1
October	4	5	8	9	1	2
November	2	4	10	12	—	—
December	—	1	4	8	—	1
Total	19	27	97	118	5	8
Case incidence ratio per 1,000 of strength:—						
1924	5·5	7·7	26·5	32·2	2·6	4·2
Average, 1921/2/3	12·8	15·7	32·0	40·8	16·1	29·3

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who had been previously treated for the disease in Iraq. Further reference is made to this disease in chapter IV, page 74.

14. *Heatstroke and heat exhaustion.*—Six cases of heatstroke resulting in 2 deaths were reported abroad compared with 3 cases resulting in 1 death during 1923. All six cases occurred in Iraq. In addition there were 36 cases of heat exhaustion compared with 43 during 1923. Of the 36 cases, 16 occurred in Iraq, 7 in Egypt, 7 in India and 3 in Palestine. The remaining case occurred amongst drafts en route to or from areas abroad.

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TABLE XXI.—CASE INCIDENCE OF DYSENTERY AT STATIONS ABROAD, 1924.

Station.	Average strength.	Clinical.		Bacillary.		Protozoal.		Total.	
		Primary cases.	All cases.	Primary cases.	All cases.	Primary cases.	All cases.	Primary cases.	All cases.
Mediterranean Littoral.									
Abbassia, Cairo and Heliopolis	704	—	—	—	1	—	1	—	2
Aboukir	609	—	1	—	—	—	—	—	1
Abu Sueir	440	2	2	—	—	—	1	2	3
Amman	131	1	2	1	1	—	1	2	4
Bir Salem	91	1	1	—	—	2	3	3	4
Helouan	145	—	—	—	—	—	—	—	—
Jerusalem	58	—	—	—	—	1	2	1	2
Malta and aircraft carriers	512	—	—	—	—	—	—	—	—
Ludd and Sarafend	230	—	—	1	1	9	9	10	10
Moascar	137	—	—	—	—	—	—	—	—
Ramleh	160	—	—	—	—	1	1	1	1
Various small stations and drafts *en route*	274	—	—	—	—	—	—	—	—
Total	3,491	4	6	2	3	13	18	19	27
Iraq.									
Baghdad	363	—	—	—	—	6	7	6	7
Basrah, Magil and Makina	579	7	7	—	—	2	3	9	10
Hinaidi	1,989	7	9	—	—	55	69	62	78
Kirkuk and Kingerban	177	1	1	—	—	8	9	9	10
Mosul	400	—	—	—	—	8	10	8	10
Shaibah	152	—	—	—	—	3	3	3	3
Total	3,660	15	17	—	—	82	101	97	118
India.									
Ambala	161	—	—	—	—	—	1	—	1
Dardoni	172	—	—	—	—	—	—	—	—
Karachi	632	—	—	—	—	—	—	—	—
Lahore	145	—	—	—	—	—	1	—	1
Lower Barian	130	—	—	—	—	—	—	—	—
Peshawar	152	—	—	1	1	2	2	3	3
Quetta	173	—	—	—	—	2	2	2	2
Risalpur	289	—	—	—	—	—	1	—	1
Various small stations	58	—	—	—	—	—	—	—	—
Total	1,912	—	—	1	1	4	7	5	8

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CHAPTER IV.—MISCELLANEOUS.

The Central Medical Board.

1. The constitution and functions of the Central Medical Board have been described in previous reports of this series, and no change in either has occurred during 1924.

2. The total number of examinations conducted by the board during 1924 amounted to 1,439, as compared with 1,684 in 1923. Of the total of 1,439 examinations, 766 were for the purpose of assessing physical fitness for aerial duties in respect of candidates for commissions in the general duties branch and also amongst serving officers. A further 282 were examinations of serving officers to determine their physical fitness for the duties of the various branches to which they belonged. Examination of candidates for the Reserve of Officers accounted for a further 170. Candidates for commissions in the chaplain's, medical, store and dental branches numbered 141. The 80 remaining cases were miscellaneous examinations, and include candidates for Princess Mary's Royal Air Force Nursing Service, preliminary examinations of cadets, &c.

3. Of the 766 candidates examined in respect of physical fitness for the general duties branch, 68 were found temporarily unfit and failed to present themselves for re-examination. Of the remaining 698, 460 were accepted and 238 rejected. Table XXII. shows the average physical standards in each of the various groups of the 460 candidates accepted for flying duties during 1924. Compared with the corresponding figures for 1923, a slight general improvement has been recorded in the averages for the total. The "time of return to normal" pulse rate, from the rate after exercise, shows a slight increase, although the rate after exercise shows a decrease compared with the corresponding figure in 1923.

4. Table XXIII. shows the causes of rejection of the 238 candidates who were not accepted. As in previous years, defective vision either alone or in combination with other defects was the chief cause of rejection. No less than 121 from a total of 238, or 50·8 per cent., were rejected for this cause alone, as compared with 51·2 per cent. during 1923. Of the 33 serving officers examined in respect of physical fitness for permanent commissions, only one was rejected.

5. Table XXIV. shows the actual number of candidates accepted and rejected under each of the different groups, as well as the percentage of the total accepted in each group. Compared with the corresponding percentages in 1923, a decrease in the percentage accepted has occurred in each group with the exception of the airman-pilot group, where a small increase has been recorded.

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TABLE XXII.—SUMMARY SHOWING THE AVERAGE PHYSICAL MEASUREMENTS OF PILOTS ACCEPTED BY THE CENTRAL MEDICAL BOARD DURING 1924.

Test	Candidates for Cadetships. 1.	Candidates for Short Service Commissions. 2.	N.C.O. Candidates. 3.	Candidates for Naval Air Arm. 4.	Serving Officers examined for Permanent Commissions. 5.	Totals. 6.
Numbers accepted -	81	229	42	75	33	460
Age - - - yrs.	18.2	22.8	23.3	24.5	28.9	22.8
Height, standing : cms.	173.5	174.9	173.7	176.1	175.8	174.8
Height, sitting - cms.	89.2	90.7	90.0	90.8	91.4	90.4
Weight - Kgms.	60.5	63.9	64.2	65.3	65.2	63.5
Chest - - cms.	83.9	86.0	87.1	87.1	87.1	86.0
Vital capacity : c. cms.	4,881	5,115	5,016	5,241	5,151	5,088
Breath-holding - secs.	79.6	81.2	82.0	82.3	84.9	81.5
Expiratory force : mm. Hg.	142.1	147.1	144.4	147.4	159.4	146.9
40 mm. Hg. test : secs.	63.0	65.1	66.4	68.7	67.5	65.6
Systolic pressure : mm. Hg.	127.3	129.7	131.8	129.9	126.2	129.1
Diastolic pressure : mm. Hg.	78.5	80.2	80.1	79.1	78.9	79.6
Pulse sitting : per min.	70.2	72.7	68.9	68.1	68.2	70.8
Pulse standing : per min.	80.4	81.6	77.1	77.2	77.1	80.0
Pulse after exercise - per min.	102.8	102.8	100.3	97.5	98.2	101.0
Return to normal : secs.	29.4	29.8	25.5	25.4	27.3	28.4

TABLE XXIII.—CAUSES OF REJECTION BY THE CENTRAL MEDICAL BOARD DURING 1924.

Reason for Rejection.	Candidates for Cadetships.	Candidates for Short Service Commissions.	Candidates for Naval Air Arm.	N.C.O. Candidates.	Serving Officers examined for Permanent Commissions in Flying Branch only.	Total.
(1) Vision - - -	19	83	11	8	—	121
(2) Ear, nose, throat, and teeth - -	—	6	1	2	—	9
(3) Medical and surgical - - -	1	9	3	1	—	14
(4) Defective physical efficiency - -	8	35	5	3	1	52
(5) Combinations of (1), (2), (3) with (4) - - -	3	34	4	1	—	42
Totals - - -	31	167	24	15	1	238

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TABLE XXIV.—RESULTS OF 698 EXAMINATIONS BY THE CENTRAL MEDICAL BOARD AS TO FITNESS FOR FLYING, 1924.

Candidates for	Number accepted.	Number rejected.	Total.	Percentage accepted.
Cadetships - - -	81	31	112	72
Short service commissions	229	167	396	57
N.C.O. pilots - - -	42	15	57	74
Permanent commissions (serving officers only).	33	1	3	97
Naval Air Arm - -	75	24	99	75
Totals - - -	460	238	698	66

Medical Officers' School of Instruction and Research Laboratory.

6. During the year, 22 medical officers received short courses of instruction in the various subjects described in detail in previous reports of this series.

7. Research work on psycho-motor responses in relation to flying has continued, and a special apparatus was devised for the purpose of recording the time taken to perform the actual arm and leg movements carried out during flying. The apparatus consists of a rudder bar which is worked by the feet. The rudder bar carries a metal arm which passes over a number of contacts according to its angular position. When the rudder is centralised, a central white lamp is lit, but when the rudder is pushed to the right, green lamps in a series are successively lit on the right of the central white light, according to the degree of rudder movement. Similarly, when the rudder is pushed to the left, red lamps in a series are successively lit according to the degree of rudder movement in that direction. A control column, worked by the hands, is so arranged that when the column is centralised two central white lamps are lit, but when moved to the right an upper row of green lamps is lit successively according to the amount of movement. As the column is again centralised the coloured lamps are extinguished one by one till only the central white lamps remain lit. Movement of the control column to the left causes a series of red lamps to operate in similar fashion.

8. A relay actuates a d'Arsonval clock and a recording tape machine, so that when any coloured lamp is lit the timing devices are recording, but are automatically shut off when the controls are centred and the white lamps only are illuminated. The apparatus is fixed in an aeroplane fuselage and the switches and timing apparatus mounted thereon for convenience of working. Two switches so operate that either can be brought into action for hand or foot movements respectively or both

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together for combined movements of hand and foot. Since, in the study of psycho-motor responses, it is important, if possible, to widen out the time of response so that clock errors may be relatively unimportant, this has been effected in the apparatus by setting the controls to a very sensitive degree. The method of investigation is as follows :—

9. The subject is seated in the aeroplane fuselage and the mechanism explained to him. A preliminary series of trial reaction is given, and, when the idea of the test is grasped, observations are made as follow :—

(i) Time taken for successive hand movements from right or left to central position.

(ii) Time taken for leg movements on the rudder bar to central position from extreme left or right positions.

(iii) Time taken for combined movements of hand and foot simultaneously—usually from control column back and full over to left side with rudder full over to the right side—a position corresponding to that obtaining in the aerial manœuvre known as a "spin." In this test the time is taken until both controls are exactly centralised.

10. The effects of distraction can be observed by sounding a horn unexpectedly during a series of observations. The effect is noted, not only upon the actual time of that response, which may be increased, but particularly upon the succeeding responses. A marked increase in reaction time persisting over several responses after the noise, suggests some instability of nervous control.

11. The time taken for the centralisation of the rudder control varies among individuals from 0·5 to 2·0 seconds, that of the control column from 1·5 to 5·0 seconds, due to the greater sensitivity of the setting of the control column; the time for the combined manœuvre (hand and foot) varies from 2·0 to 10·0 seconds. These observations elucidate the following points :—

(i) Comparison of the time curves of hand and foot taken separately.

(ii) Comparison of the curve of simultaneous hand and foot movements to those of each taken separately.

(iii) The actual speed of reactions of each type as shown by the ordinates in the graph.

12. Experiments with the apparatus show that—

(i) the first-class pilot gives a consistent record with an average time about 2–3 seconds, varying according to the type of aircraft and number of hours flown;

(ii) candidates found unsuitable for flying instruction give curves of a multi-peaked nature, showing markedly erratic responses, with generally a high average time, 5–6 seconds;

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(iii) the candidate suitable for training, although recording a longer average time, 4–5 seconds, displays consistency of performance, although markedly erratic responses of long average duration probably indicate an inaptitude for the co-ordinated movements of flying.

13. It is not intended that this apparatus should be used on one occasion only, *e.g.*, at the entrance medical examination. It should preferably be employed during instruction in flying, when periodic tests will afford indication as to the rate of progress and the likelihood of acquisition of flying skill. It seems probable also the apparatus may prove of service as a means of training pupils to acquire on the ground those particular co-ordinations necessary for the control of an aeroplane in the air. Further, the apparatus may afford indication of the particular type of aircraft for which a pilot is especially suitable, shortness of time combined with stability indicating an aptitude for scout aircraft.

14. Observations of the effect of rotatory movement on the circulatory system, where undue sensitivity to rotation has been suspected or was actually present, have been continued during the year. The procedure is as follows :—the subject is seated in the rotating chair and the nature of the test explained to him. The pulse rate is noted in 5-second periods, and the blood pressures recorded. The subject is then subjected to a relatively fast spin, 10 times in 20 seconds. The pulse rate and blood pressures are then again taken and the effects noted. The main results may be summarised as follows :—

(i) In fit pilots, particularly those accomplished in aerial acrobatics, rotation produces but little effect upon the pulse rate or arterial pressures.

(ii) In individuals subject to vertigo, nausea, or vomiting, rotation produces a marked rise in pulse rate and in systolic and diastolic pressures.

(iii) In subjects liable to fainting, rotation produces a characteristic fall in the diastolic pressure.

(iv) In highly strung subjects, liable to develop an anxiety neurosis, there is a marked anticipatory rise of pulse rate and systolic blood pressure prior to rotation, which may or may not be further affected by rotation.

(v) In practice it is found that subjects may tend to exhibit a combination of abnormal responses, but the main criterion is the fact that the satisfactory pilot is relatively stable in his responses.

From the above results, therefore, it will be seen that this test appears to afford valuable information in respect of flying efficiency and can be profitably employed when, from the history or general medical examination, any doubt is entertained whether such efficiency is likely to be attained.

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Physical Efficiency of Serving Officers of the Royal Air Force.

15. The procedure whereby every officer and airman-pilot is medically examined at the end of each year, has been described in previous reports of this series and was continued during 1924. The results of such examinations are recorded on a special card. The total number of such cards received in respect of 1924 amounted to 3,187. Table XXV, page 60, shows the physical assessment in respect of aerial duties of 2,284 officers of the general duties branch during 1924; the corresponding figures for 1923 and 1922 have also been inserted. The figures shown for 1924 are not strictly comparable with those for previous years owing to slight variations in the rank and ages of officers required to be examined in full detail. From the table it will be seen that 90 per cent. of officers of the general duties branch were fit for full flying duties, the percentage being 89 at home and 92 abroad. It should be borne in mind that officers temporarily unfit for aerial duties have been included amongst the unfit. Of the 228 officers shown as unfit for full flying duties, many were fit for aerial duties if piloting was excluded.

16. Table XXVI, page 61, shows the average physical standards in each of the tests capable of numerical expression of the 2,056 serving officers of the general duties branch, found fit for full flying duties. The corresponding standards of 119 airman-pilots also found fit for full flying duties during 1924, have been inserted at the foot of the table, as well as the accepted standards based on the examination of fit pilots during war conditions. Comparing the averages for the total with the corresponding figures for 1923, an all-round general improvement has occurred during 1924, and the standards are also higher than the previous standards based on experience in war. It will be noticed in table XXVI that the age group 31 and over, in the United Kingdom, shows a slight deterioration in physical stamina as evidenced by the figures for the breath-holding, fatigue test, and pulse rates, sitting, standing and after exercise, although the systolic and pulse pressures are lower than in the younger groups. The figures for airman-pilots closely approximate to those shown for officers.

17. Table XXVII, page 62, shows the reasons of unfitness, temporary and otherwise, of the 228 officers of the general duties branch shown as unfit for full flying duties. As in previous years, ocular defects and disorders constitute the chief cause of unfitness; this cause alone accounted for 33·3 per cent. of the total during 1924 compared with 27·0 per cent. in 1923. The letters D.P.E. stand for "defective physical efficiency," which either alone or in combination with other causes, accounted for 13·6 per cent. of the total during 1924, compared with 26·7 per cent. in 1923. Many of the 228 officers shown

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as unfit for full flying duties were fit for duty as combatant passengers and also for ground duties at home and abroad. A certain number of officers in hospital or on sick leave are also included in the total.

18. Table XXVIII, page 62, gives the average results of further tests of 2,284 officers of the general duties branch. From the table it will be seen that a higher standard is reached in every test amongst the fit than amongst the unfit group. Cards were also received in respect of 632 officers of the medical, dental, chaplain, stores and accounting branches. Of the 632 officers 603 were assessed as fit for ground duties both at home and abroad and 29 fit for ground duties at home only. The latter group includes officers temporarily unfit. Cards were also received in respect of 148 officers of the general duties branch, mostly over the age of 40, who are not required by regulations to be fit for full flying duties. Of the 148, 72 were fit for limited flying, 14 as combatant passengers, and 62 as non-combatant passengers. All were fit for ground duties both at home and abroad.

TABLE XXV.—PHYSICAL ASSESSMENT IN RESPECT OF AERIAL DUTIES OF 2,284 OFFICERS OF THE GENERAL DUTIES BRANCH.

	Year.	Fit, full flying.	Unfit, full flying.	Total.	Percentage fit, full flying.
At home	1924	1,384	168	1,552	89
	1923	*1,330*	*196*	*1,526*	*87*
	1922	*1,181*	*173*	*1,354*	*87*
Abroad	1924	672	60	732	92
	1923	*616*	*85*	*701*	*88*
	1922	*638*	*104*	*742*	*86*
Total	1924	2,056	228	2,284	90
	1923	*1,946*	*281*	*2,227*	*87*
	1922	*1,819*	*277*	*2,096*	*87*

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TABLE XXVI.—AVERAGE RESULTS OF TESTS OF 2,056 SERVING OFFICERS AND 119 NON-COMMISSIONED OFFICER PILOTS OF THE GENERAL DUTIES BRANCH, FIT FOR FLYING DUTIES.

—	Age group.	No. examined.	Age.	Weight.	Time breath held.	Expiratory force.	Fatigue test.	Pulse rate per minute.			Time taken to return to normal.	Systolic pressure.	Pulse pressure.
								Sitting.	Standing.	After exercise.			
OFFICERS.	Yrs.	No.	Yrs.	Kgs.	Sec.	M.M. H.	Secs.				Secs.	M.M. Hg.	M.M. Hg.
At home - -	under 25 -	361	22·0	67·4	77·4	145·3	59·2	72·8	78·4	99·4	20·3	123·6	44·7
	25—30 -	638	27·2	68·1	72·1	148·7	57·0	73·0	79·3	100·1	20·4	122·2	42·6
	31 and over-	385	34·8	70·0	71·4	147·1	55·7	74·0	81·1	101·8	20·4	121·9	41·7
Total at home -		1,384	27·9	68·5	73·3	147·3	57·2	73·2	79·6	100·4	20·4	122·5	42·9
Abroad - -	under 25 -	144	22·8	68·2	75·6	153·3	62·7	73·6	81·2	102·6	21·9	124·4	44·0
	25—30 -	338	27·4	68·7	75·0	158·6	59·9	73·1	80·8	100·2	21·5	126·1	44·9
	31 and over-	190	34·7	69·6	69·0	152·1	58·4	73·2	80·5	98·6	20·4	128·1	44·4
Total abroad -		672	28·5	68·9	73·4	155·6	60·1	73·2	80·8	100·3	21·3	126·3	44·6
Total force - -	under 25 -	505	22·2	67·7	76·9	147·6	60·2	73·1	79·2	100·3	20·8	123·8	44·5
	25—30 -	976	27·2	68·3	73·1	152·1	58·0	73·0	79·8	100·1	20·8	123·5	43·4
	31 and over-	575	34·8	69·9	70·6	148·7	56·6	73·7	80·9	100·7	20·4	123·9	42·6
	All ages -	2,056	28·1	68·6	73·3	150·1	58·2	73·2	80·0	100·4	20·7	123·7	43·4
N.C.O. pilots -	All ages -	119	24·2	65·1	72·1	148·6	57·7	73·1	81·4	100·8	21·7	128·3	47·2
Previous standards based on war conditions -	—	—	—	—	70	110·0	52·0	72·0	84·0	96—108	under 30·0	120·0	40·0

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TABLE XXVII.—REASONS FOR UNFITNESS (TEMPORARY OR OTHERWISE) FOR FULL FLYING DUTIES OF 228 OFFICERS OF THE GENERAL DUTIES BRANCH.

Defect.	At home.	Abroad.	Total.
Vision	53	23	76
Ears or teeth	5	2	7
Medical	46	16	62
Surgical	43	9	52
D.P.E.	12	7	19
D.P.E. and vision	5	2	7
D.P.E. and medical	2	1	3
D.P.E. and surgical	2	—	2
Total	168	60	228

TABLE XXVIII.—AVERAGE RESULTS OF FURTHER TESTS OF OFFICERS OF THE GENERAL DUTIES BRANCH, 1924.

Nature of Test.	Officers fit for flying duties, 2,056.		Officers unfit for flying duties, 228.		Total, 2,284.	
	Numbers.	Percentage.	Numbers.	Percentage.	Numbers.	Percentage.
Tremor.						
Present	764	37·2	126	55·3	890	39·0
Absent	1,292	62·8	102	44·7	1,394	61·0
Self-balancing.						
Steady	1,892	92·0	167	73·2	2,059	90·1
Unsteady	164	8·0	61	26·8	225	9·9
Knee jerks.						
Normal	1,780	86·6	186	81·6	1,966	86·1
Abnormal	276	13·4	42	18·4	318	13·9
Vision.						
6/6 both eyes	1,915	93·2	154	67·5	2,069	90·6
6/6 and 6/9; and 6/9 and 6/9	89	4·3	21	9·2	110	4·8
Over 6/9 in either	52	2·5	53	23·3	105	4·6
Nasopharynx.						
Normal	1,962	95·4	211	92·5	2,173	95·1
Abnormal	94	4·6	17	7·5	111	4·9
Teeth.						
No treatment required	1,557	75·7	174	76·3	1,731	75·8
Treatment required	499	24·3	54	23·7	553	24·2
Pyorrhœa.						
Absent	2,034	98·9	225	98·7	2,259	98·9
Present	22	1·1	3	1·3	25	1·1

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Medical Examination of Recruits.

19. The standards of physical fitness required of recruits for the Royal Air Force have been described in previous reports of this series and with one exception have remained unaltered. A slightly lowered standard of vision has been authorised in certain skilled trades, as notified from time to time by the Inspector of Recruiting. During 1924 this lowered visual standard applied solely to fitters. The visual standard required of a recruit for this trade was :—

(i) Ability to read D=36 at six metres with each eye without glasses, provided that the vision of each eye be correctable up to D=12 by glasses;

(ii) Ability to read D=12 at six metres with either eye without glasses, and not less than D=60 with the other eye without glasses, provided that the vision of the worse eye is correctable up to D=12 by glasses.

20. Recruits undergo the necessary medical examination :

(i) At R.A.F. recruiting depôts, or

(ii) At R.A.F. stations, or

(iii) At certain of the larger towns in Great Britain, where civilian medical practitioners are engaged on a capitation basis.

During the year R.A.F. recruiting depôts were open at London, Birmingham till 31st March, 1924, Newcastle till 31st October, 1924, Bristol till 28th March, 1924, Southampton till 18th January, 1924, Middlesbrough till 16th February, 1924, and Leeds till 22nd February, 1924. Where there is no recruiting depôt within a reasonable distance, the medical examination is carried out by a civilian medical practitioner. If the recruit is considered physically fit by the civilian medical practitioner, he is instructed to proceed to the nearest R.A.F. recruiting depôt where a more detailed examination is carried out by R.A.F. medical officers. The number of civilian medical practitioners carrying out these preliminary examinations amounted to 67 during 1924. The adoption of this procedure results in a considerable economy, as the minimum expenditure in travelling and maintenance is thereby incurred. These civilian practitioners carried out 2,630 preliminary examinations during 1924.

21. The total number of examinations carried out during the year amounted to 7,342. Of these, 1,150 were rejected at the preliminary examinations by civilian medical practitioners. Of the remaining 6,192, 4,495 were passed as fit and 1,697 rejected as unfit at R.A.F. recruiting depôts. Of the final total of 4,495 found physically fit, 3,424 were ultimately enlisted, the remainder being rejected for various non-medical reasons, *e.g.* trade tests, &c. Table XXIX, page 64, shows the average physical measurements, classified by age groups, of the 3,424 recruits finally enlisted. The average figures for the four-year period 1920–1923 have been inserted in italics for comparison with the figures for 1924. Table XXX, page 65, shows the average physical measurements and ages classified by previous occupations.

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Table XXXI, page 66, gives the average physical measurements classified by geographical areas of residence previous to enlistment. It will be seen from these three tables that the average physical measurements of the recruits accepted during 1924 closely approximate to the average of the four previous years. Table XXXII, page 67, shows the chief reasons for rejection of the 2,847 candidates who were not accepted on medical grounds. As in previous years, "loss or decay of many teeth" constitute the chief cause of rejection, 413 of a total of 2,847, or 14·6 per cent. being due to this cause alone. Defective or deficient teeth have been the chief cause of rejection during 1922, 1923 and 1924, the percentages of the total rejected being respectively 28·3, 17·8 and 14·6 per cent. during the 3 years. This progressive decrease possibly can be attributed to the increasing recognition of the value of oral hygiene and also possibly the work of the schools' dental clinics. Compared with the corresponding table in the report for 1923, diseases of the heart now occupy second place as a cause of rejection, displacing poor physique, which during 1924 occupies fourth place.

TABLE XXIX.—ACCEPTED RECRUITS, 1924, AND AVERAGE FOR PREVIOUS FOUR YEARS.

AVERAGE PHYSICAL MEASUREMENTS CLASSIFIED BY AGE.

Age last Birthday.	Total.	Height.	Weight.	Chest.		
				Max.	Min.	Range.
	No.	Ft.	Lb.	In.	In.	In.
14-17 - - - 1924	1,185	5·41	112·7	32·6	29·9	2·7
1920/21/22/23	*3,510*	*5·40*	*111·3*	*32·2*	*29·5*	*2·7*
18 - - - - 1924	765	5·56	126·1	35·2	32·3	2·9
1920/21/22/23	*4,874*	*5·54*	*124·7*	*35·0*	*32·3*	*2·6*
19 - - - - 1924	443	5·57	127·9	35·4	32·5	2·9
1920/21/22/23	*3,015*	*5·54*	*127·1*	*35·2*	*32·6*	*2·6*
20 - - - - 1924	294	5·59	129·8	35·7	32·9	2·8
1920/21/22/23	*2,007*	*5·60*	*128·9*	*35·5*	*32·9*	*2·7*
21 - - - - 1924	214	5·55	130·0	35·8	32·8	3·0
1920/21/22/23	*1,501*	*5·55*	*130·1*	*35·8*	*33·0*	*2·7*
22 - - - - 1924	115	5·55	129·6	35·9	32·9	3·0
1920/21/22/23	*1,165*	*5·55*	*130·6*	*35·8*	*33·1*	*2·7*
23 - - - - 1924	82	5·57	131·1	35·8	32·9	2·9
1920/21/22/23	*817*	*5·55*	*131·4*	*36·0*	*33·3*	*2·7*
24 - - - - 1924	65	5·59	132·1	36·4	33·5	3·0
1920/21/22/23	*615*	*5·55*	*131·4*	*36·0*	*33·3*	*2·7*
25 - - - - 1924	45	5·56	132·1	36·3	33·3	3·0
1920/21/22/23	*490*	*5·56*	*133·4*	*36·2*	*33·5*	*2·7*
26 - - - - 1924	67	5·57	133·2	36·3	33·4	3·0
1920/21/22/23	*582*	*5·55*	*133·1*	*36·3*	*33·7*	*2·7*
27 and over - - 1924	149	5·59	135·5	36·6	33·8	2·9
1920/21/22/23	*1,663*	*5·57*	*137·8*	*36·7*	*34·0*	*2·7*
Total - - - 1924	3,424	5·51	123·2	34·6	31·7	2·9
1920/21/22/23	*20,269*	*5·52*	*125·9*	*35·0*	*32·3*	*2·7*

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Table XXX.—Accepted Recruits, 1924, and Average for Previous Four Years. Average Physical Measurements and Ages classified by Occupation.

Previous Occupation.	Total.	Age.	Height.	Weight.	Chest.		
					Max.	Min.	Range.
	No.	Yrs.	Ft.	Lbs.	Ins.	Ins.	Ins.
Building trades and electricians - - - 1924	359	20·4	5·57	128·3	35·4	32·5	2·9
1920/21/22/23	*1,970*	*20·8*	*5·53*	*128·1*	*35·4*	*32·8*	*2·7*
Clerks - - - - - - - - 1924	249	20·0	5·59	127·8	35·2	32·4	2·9
1920/21/22/23	*2,206*	*21·3*	*5·59*	*128·8*	*35·5*	*32·7*	*2·8*
Commercial, public and personal services - 1924	222	19·8	5·54	125·1	35·0	32·1	2·9
1920/21/22/23	*1,478*	*21·8*	*5·55*	*129·1*	*35·4*	*32·8*	*2·6*
Metal workers - - - - - - - 1924	516	20·5	5·56	127·6	35·3	32·4	2·9
1920/21/22/23	*3,908*	*20·6*	*5·54*	*127·2*	*35·3*	*32·6*	*2·7*
Schoolboys - - - - - - - 1924	1,030	15·5	5·41	112·6	32·6	29·9	2·8
1920/21/22/23	*2,998*	*15·6*	*5·40*	*111·1*	*32·2*	*29·5*	*2·7*
Transport and communications - - - 1924	166	20·2	5·54	128·9	35·4	32·6	2·9
1920/21/22/23	*2,565*	*21·0*	*5·55*	*131·0*	*35·8*	*33·1*	*2·7*
Indoor trades (other than above) - - 1924	244	19·8	5·52	126·9	35·3	32·4	2·9
1920/21/22/23	*1,905*	*21·4*	*5·52*	*128·3*	*35·5*	*32·9*	*2·6*
Outdoor trades (other than above) - - 1924	627	19·8	5·56	128·6	35·8	32·9	2·9
1920/21/22/23	*2,662*	*20·4*	*5·51*	*128·0*	*35·5*	*32·9*	*2·6*
Unstated - - - - - - - - 1924	11	19·7	5·67	133·5	35·9	33·1	2·9
1920/21/22/23	*577*	*21·0*	*5·49*	*127·4*	*35·2*	*32·5*	*2·6*
Total - - - - - - - - 1924	3,424	18·7	5·51	123·2	34·6	31·7	2·9
1920/21/22/23	*20,269*	*20·1*	*5·52*	*125·9*	*35·0*	*32·3*	*2·7*

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TABLE XXXI.—ACCEPTED RECRUITS, 1924, AND AVERAGE FOR PREVIOUS FOUR YEARS.
AVERAGE PHYSICAL MEASUREMENTS AND AGES CLASSIFIED BY GEOGRAPHICAL AREAS OF RESIDENCE.

Locality.	No.	Age.	Height.	Weight.	Chest.		
					Max.	Min.	Range.
		Yrs.	Ft.	Lbs.	Ins.	Ins.	Ins.
London - - - - - - - - 1924	586	19·4	5·55	125·8	35·3	32·4	2·9
1920/21/22/23	*3,931*	*20·7*	*5·54*	*127·6*	*35·4*	*32·8*	*2·7*
Scotland - - - - - - - - 1924	135	19·1	5·48	124·4	34·9	31·7	3·2
1920/21/22/23	*1,518*	*20·8*	*5·48*	*127·1*	*35·3*	*32·6*	*2·7*
Ireland, Wales and West of England - - 1924	725	17·6	5·46	118·8	33·8	31·0	2·8
1920/21/22/23	*3,835*	*19·4*	*5·50*	*123·8*	*34·4*	*31·7*	*2·7*
N.E., N.W., and West of England - - 1924	499	19·7	5·49	123·6	34·5	31·5	3·0
1920/21/22/23	*3,383*	*20·4*	*5·50*	*125·5*	*35·0*	*32·3*	*2·8*
E. and S.E. of England - - - - 1924	1,022	18·4	5·53	123·8	34·7	31·9	2·8
1920/21/22/23	*5,092*	*19·8*	*5·54*	*125·6*	*34·8*	*32·2*	*2·6*
Midlands - - - - - - - - 1924	446	19·3	5·53	124·8	34·8	32·0	2·8
1920/21/22/23	*2,479*	*20·3*	*5·53*	*126·6*	*35·2*	*32·5*	*2·7*
Elsewhere and unstated - - - - 1924	11	20·8	5·57	129·6	35·1	32·5	2·6
1920/21/22/23	*31*	*21·8*	*5·61*	*130·7*	*35·9*	*33·2*	*2·8*
Total - - - - - - - - 1924	3,424	18·7	5·51	123·2	34·6	31·7	2·9
1920/21/22/23	*20,269*	*20·1*	*5·52*	*125·9*	*35·0*	*32·3*	*2·7*

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TABLE XXXII.—CAUSES OF REJECTION OF RECRUITS FOUND PHYSICALLY UNFIT DURING 1924.

Cause of Rejection.	Number rejected	Percentage of total rejected.
Loss or decay of many teeth	413	14·5
Diseases of heart	349	12·3
Deformities of feet	298	10·5
Poor physique	278	9·8
Defects of vision	240	8·4
Diseases of lungs	222	7·8
Diseases of ears (including deafness)	218	7·7
Defects of extremities	105	3·7
Diseases of nervous system	77	2·7
Albuminuria	61	2·1
Varix	59	2·1
Diseases of skin	56	1·9
Varicocele	42	1·5
Malformations	42	1·5
Hernia and bubonocele	38	1·3
Diseases of urinary system	37	1·3
Enlarged glands	32	1·1
Other causes	280	9·8
Total	2,847	100·0

Hygiene and Sanitation.

United Kingdom.

22. A further improvement in general sanitary conditions along the lines indicated in previous reports has been recorded during the year. At some stations difficulties were experienced in maintaining general cleanliness, owing to the considerable amount of new construction taking place.

23. *Lectures and courses.*—A total of 49 officers and 57 airmen obtained pass marks at the three week courses held at the Army School of Hygiene; in addition, 10 airmen of the R.A.F. medical service passed in the longer course of four months duration which is now held once a year. Cadets at the Cadet College, Cranwell, received the usual course of lectures on hygiene and sanitation, and examination revealed that a satisfactory standard of knowledge was maintained.

24. *Accommodation.*—Steady progress in the building programme has been recorded with resultant improvement in barrack accommodation, workshops, married quarters, &c. The general principles followed in design and construction are of a high standard and the point of view of hygiene has been carefully considered. Particular attention has been directed to the heating of barrack blocks and the general principle of fires in these rooms has been adopted.

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25. The central heating system installed at Halton required careful regulation in order to avoid the dry, stuffy atmosphere generally associated with this method of heating. Accommodation at Gosport was the subject of a special enquiry. The living rooms at this station are situated in an old fort and are damp and under-ventilated. Plans to improve the accommodation are at present being considered. Improvements of a minor character have been effected in workshops, and special attention has been directed to workers in paint-spray and enamel rooms. The provision of direct exhaust ventilation, hoods, and masks for workers in these workshops were some of the improvements carried out.

26. *Conservancy.*—By means of frequent analyses, a close supervision has been maintained on sewage effluents, and only in a few instances was the standard of purity found to vary. In all such instances a full investigation into the working and condition of the installation has been promptly carried out. No complaints were recorded in connection with the disposal of refuse; incinerators were maintained in good repair, and contractors, where employed, have proved satisfactory.

27. *Water supplies.*—The supply of each station has been analysed at least once during the year and where there were any grounds for doubt as regards purity, frequent analyses were performed. At Spittlegate, the unsatisfactory supply, to which reference was made in former reports, was further investigated, and, as a result, a new source of supply will shortly be available. At Manston, the relaying of the pipe line from Ramsgate reservoir, and also within the confines of the station, is rapidly nearing completion. At Upavon, the Valley Bore, although a deep well, has continued to yield unsatisfactory results. It is not definitely known why contamination as shown by repeated analyses should persist, but since the bore passes through chalk the presence of a fissure is suspected. The installation of an automatic chlorinating plant at this station was considered, but as the water from this source is only used to supplement the supply from the Hill Bore, the provision of costly apparatus was, for the present, deemed unnecessary. Chlorination by hand has been carried out when it has been necessary to draw on this source of supply.

28. *Food and cooking.*—The methods of supply, storage and preparation of food were reported as satisfactory. In a few instances, gastro-intestinal disorders of a mild nature, apparently of food origin, required investigation :—

(i) At Upavon, during July, eight airmen showed mild symptoms of food poisoning, and investigation pointed to the contents of a tin of preserved meat, for which the warranty had expired. Care is taken to exclude from consumption all tinned foods which are warranty-expired, but occasional instances still come to light where this has not been carried out.

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(ii) At Flower Down, during July, 34 airmen were reported as suffering from gastro-intestinal disorders, some being of sufficient gravity to necessitate admittance to sick quarters. Investigation showed that all, some hours previously, had partaken of meat pie which had been prepared, but not cooked, on the previous day.

(iii) At Uxbridge, in December, 12 officers were found to be suffering from a gastro-intestinal attack of a mild character. Samples of food were analysed and a possible cause was found in an excess of copper preservative in tinned foods of French manufacture.

29. *General.*—(i) The general health of the force at home has remained at a high standard. The incidence of communicable disease has been below the average, and no serious outbreaks of epidemic disease have occurred. During the winter months a considerable number of cases of pharyngitis, naso-pharyngitis and tonsillitis were recorded, more especially amongst the boys at Cranwell and Halton.

(ii) Chart II, facing page 6, shows the monthly case incidence of upper air passage infections, in which group the above-mentioned diseases are included. The effect of these diseases on the general sickness incidence will be evident on reference to Chart I, facing page 5. At Halton, the overheating of barrack rooms by steam pipes may have been a contributory cause, but weather conditions were probably a more important factor. During February and March a considerable number of cases of influenza occurred at Cranwell. Later the disease appeared at other stations and tended to become widespread. The disease was mild in type and cases quickly recovered. There were no deaths. A recrudescence of tinea cruris, almost entirely confined to boys, occurred at Cranwell after the return from Christmas leave, but the continuance of the prophylactic measures described in the report for 1923, succeeded in keeping the disease under control.

(iii) A steady all-round development, which is to a certain extent due to the systematic training, has been reported amongst the boys at Halton. The first entry, aged 15 to 16½ years, admitted in 1921, has been measured and weighed twice during each year. The average increases recorded over the period of $2\frac{3}{4}$ years were—

Increase in height - - -	4·02 cms. (1·61 ins.).
,, ,, weight - - -	6·5 kilos. (14·34 lbs.).
,, ,, chest measurement, unexpanded - -	6·25 cms. (2·45 ins.).
,, ,, chest measurement, expanded - - -	5·35 cms. (2·10 ins.).

(iv) Scrutiny of individual results showed that the increase was general and progressive, except in regards weight. New entrants were frequently found to lose weight for a few months,

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probably on account of flabbiness and lack of properly regulated exercise in civilian life.

(v) During the early months of training a certain number of boys were found to suffer from hallux rigidus. A possible contributory cause may be the rather heavy type of boot supplied. Provision of a lighter type of boot is at present being investigated.

(vi) Particular attention has been given to the welfare of wives and families, more especially at the larger stations. Representative committees mainly composed of the wives of officers and airmen have been formed, and, where possible, the services of a nurse secured. At the depôt at Uxbridge a whole-time welfare nurse has been employed, the work carried out being similar to welfare work in civil life. Two cases of enteric fever occurred during the year, one at Henlow and the other at Gosport; the source of infection could not be traced in either of the cases. The occurrence of a case of anthrax in the Royal Navy, contracted through the use of a service shaving brush, necessitated an enquiry being made regarding similar brushes issued to the Royal Air Force. Instructions were issued to all units and all brushes of certain batch numbers were withdrawn and ultimately destroyed. Bacteriological examination of several of the brushes of the series condemned yielded negative results.

Middle East.

Egypt.

30. Meteorological features in the Delta during the year were recorded as follows:—Atmospheric pressure was low during the period January to March and again during July and August. The air-temperature was above the average from July to October and below the average during the first five months of the year. Humidity varied considerably, being abnormally low during February and April and above the average during the remaining months.

31. *Accommodation.*—Generally, accommodation in this command continued to provide comfortable and healthy quarters. Improvements are being effected at Heliopolis owing to the unsatisfactory state of the present buildings. Plans have been approved for new barrack blocks at Aden, where they are urgently required, and construction will shortly commence. Workshops have been maintained in a satisfactory condition. The provision of desk fans in certain of the smaller workshops has had a favourable effect on the comfort and health of workers.

32. *Water supplies.*—The supply at Aboukir has been consistently of good quality, which, in view of the analyses prior to 1923, can be deemed as now satisfactory. Constant supervision has, however, been found necessary to maintain the required standard of purity. The supply at Helwan, although provided from municipal sources, still requires chlorination. A total of 68 water analyses was carried out during the year.

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33. *Conservancy.*—The new drainage system installed at Abu-Sueir has given satisfactory results, the flooding of the area for the disposal of the effluent being the only trouble experienced. Conservancy, generally has been carried out in a satisfactory manner.

34. *General.*—The incidence of sandfly fever was the lowest so far recorded in this command and communicable disease was not prevalent.

Palestine.

35. The areas occupied were Sarafand, Ramleh, Jerusalem and Amman, with outstations at Semakh, Beersheba, Jericho and Beisan. The Sarafand-Ramleh area consists of approximately 3,000 acres of cultivated land heavily watered, of which the chief products are oranges, olives and market produce. Irrigation wells, reservoirs and water channels abound and require constant supervision. The bazaars and market places associated with towns in this area have been supervised in conjunction with the Medical Officer of Health.

36. *Accommodation.*—Double storey barrack blocks are now available at Ramleh, the few remaining temporary huts being utilised as married quarters, workshops, etc. The hospital accommodation at Sarafand remains unsatisfactory, but buildings on a new site have been reserved for conversion into more suitable hospital accommodation. Personnel at Sarafand are housed in permanent well-constructed barracks provided with verandahs. In Jerusalem accommodation varies in type but is considered satisfactory. Permanent buildings have been completed and occupied at Amman.

37. *Water supplies.*—Generally, water supplies have been satisfactory. Wells are available at all stations with the exception of Samakh, where the supply is drawn from the river Jordan. Water is stored in tanks subject to regular supervision prior to use. Chlorination is carried out where necessary. Under arrangements with the public health authorities analyses were performed twice in respect of each station during the year. At Ramleh the deep bore has consistently revealed a high chlorine content, but the water is potable although not very palatable. At Amman the source is a well 50 feet in depth which is fed from the river Amman through loose soil. Analyses are periodically unsatisfactory and necessitate changes in the amount of chlorine required from time to time. A course of lectures on water duties was held during the summer months and 2 per cent. of the personnel qualified as water duty orderlies.

38. *Conservancy.*—The water-carriage system at Ramleh is now in use and has proved satisfactory. A similar system is nearing completion at Amman. The drainage system for sullage water at Sarafand gave satisfactory results; the main drain runs for almost a mile beyond the cantonments to a large sedimentation tank, the effluent being used for irrigation purposes. Deep soakage

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pits are utilised at most stations and constant supervision is required. Surface water is disposed of in open artificial channels. Where contractors were employed the work was generally satisfactorily performed; but this method of disposal naturally entails constant supervision.

39. *Food and Cooking.*—A small outbreak of food poisoning in the early summer was traced to the consumption of meat cooked two days after delivery. The practice followed is for all food to be cooked on the day of receipt. Bacon was found difficult to keep in good condition and a considerable quantity of the reserve stock had to be condemned. Vegetables were varied as much as possible, and proposals for cultivation of allotments locally were considered and provisionally adopted as an experiment

40. *General.*—Frequent systematic inspections of stations by personnel trained for these duties greatly aided the maintenance of satisfactory sanitary conditions. Anti-malarial measures were undertaken in conjunction with the civil public health authorities and proved successful. The incidence of malaria shows a considerable reduction compared with 1923, although an epidemic which occurred amongst the natives near Jaffa in September assumed considerable proportions. The incidence of sandfly fever also showed a decrease and the low incidence of the enteric group is proof of the improvements effected in sanitary conditions.

Malta.

41. Sandfly fever was prevalent amongst the native population, although the summer was cooler than normal, but few cases occurred amongst air force personnel. The precautionary measures, initiated in 1921, have been continued each year and the tarring of surfaces is now almost completed. This work has proved advantageous in many ways, e.g. in keeping the station dry and free from mud during wet weather; it has also resulted in a diminution in the number of cases of colds, sore throat, etc.; in addition it has to a great extent eliminated the effects of "glare," thus ensuring comfort whilst working.

42. The provision of fans has been much appreciated and the results have justified the expense involved.

43. The senior medical officer draws attention to the following points,—

(i) The 1924 incidence of sandfly fever was the lowest so far recorded in this command.

(ii) Cases of sandfly fever were of very slight severity.

(iii) No cases occurred amongst officers and airmen who arrived at Malta, unacclimatised, during July.

(iv) After noting the effects of the prophylactic measures on the incidence of sandfly fever, authorities of other services recommended the adoption of the procedure.

The prophylactic measures adopted against sandfly fever result in a high degree of sanitation.

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Iraq.

44. The meteorological statistics for 1924 were—

	Basrah Area.	Baghdad Area.	Mosul Area.
Maximum temperature - -	119° F.	120·6° F.	116·9° F.
Minimum temperature - -	23° F.	24·0° F.	22·9° F.
Rainfall - - - -	222·2 mms.	100·3 mms.	364·0 mms.

The rainfall was considerably greater than in 1923, and at Basrah and Baghdad considerable inundation by river water occurred.

45. *Accommodation.*—The type of buildings has been described in previous reports and no material change has been reported during 1924.

46. *Water supplies.*—A new pumping station has been erected at Baghdad, consisting of a Wallace and Teirnan infusion set in addition to a Bell filter, and large sedimentation tank. The average quantity of chlorine required during the year was approximately 2 parts per million, the actual quantity being varied in accordance with the weekly bacteriological analyses. Over 5,000 bacteriological and 50 chemical analyses were performed during the year. The water supplied has been of a high standard of purity and no disease could be attributed to its consumption.

47. *Conservancy.*—General improvements to the existing systems were reported during the year.

48. *Food and cooking.*—Satisfactory standards have been maintained and no complaints have arisen.

49. *General.*—(i) The general health of all personnel has remained satisfactory. The work of the sanitary section has again received favourable mention.

(ii) The chief communicable diseases recorded were malaria and dysentery, detailed figures for which will be found in chapter III.

(iii) One case of cholera was reported at Abadar in June. An epidemic of plague occurred in the spring amongst the native population both at Basrah and Baghdad, and the incidence was higher than in 1924; no cases occurred amongst R.A.F. personnel. There has been an increase in the case incidence of dysentery compared with 1923; the increase is accounted for by the Principal Medical Officer as follows:—"During the current year all cases of dysentery have been followed up and thoroughly investigated. The method followed in all cases has been one of thorough bacteriological examination of the stools of every possible carrier, natives included. These examinations resulted in the discovery of numerous carriers and such cases have been recorded as dysentery."

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(iv) The case incidence of malaria shows a reduction when compared with 1923. Anti-malarial measures as described in previous reports were continued and amplified. The Principal Medical Officer comments as follows :—" During my visit to Basrah I was very impressed with the thorough manner in which the anti-malarial work was carried out and it appeared that everything was being done to prevent an epidemic of the magnitude experienced in 1923." The Senior Medical Officer, Basrah Group, reports : " it is considered that the units in this group are conscientious in the observance of prophylactic measures and anxious to reduce the incidence of disease and this applies particularly to malaria. Whilst some personnel do not intelligently use the measures recommended, the vast majority seem only too anxious to avoid infection. The oiling of pools is strictly carried out and larvæ have not been found in oiled pools, but as long as units are situated in close proximity to the date groves so long will malaria continue to be a problem. All pools under air force control have yielded negative results, but inspection of private land adjacent revealed pools literally alive with anopheline larvæ."

(v) The trades mainly affecting the health of airmen are those which entail exposure to the sun, i.e., motor drivers and motor cyclists. During the hot weather transport is reduced to a minimum from 09·00 hours to 17·00 hours daily and all vehicles are equipped with charguls, mugs, etc., also tinted glasses are issued to all drivers. During the year no cases of heat-stroke occurred amongst personnel so employed.

(vi) The occurrence of two cases of bilharziasis in the early months of the year gave prominence to the possibility of the occurrence of this disease in much larger numbers. Examination of the rivers, bathing pools and ditches in the Hinaidi region demonstrated the presence of numerous snails of the bilharzia transmitting species. Subsequent bacterial examination proved the snails to be infected. A large number of urine examinations of personnel were carried out and over 40 cases of the disease were discovered. Investigation indicated that infection was distributed by a bathing pool and possibly by the Diyala river; no cases were found amongst personnel who bathed in the Tigris. Bathing was restricted to a pool supplied with chlorinated and filtered water. The pool was periodically emptied, cleaned and creosoted. No further cases occurred as a result of the measures undertaken. Cases were treated with antimony tartarate, a full course consisting of 30 grains being given intervenously. No cases of relapse occurred. One case of anthrax was reported, the patient having been shaved by a native barber two days previous to the appearance of the pustule. The man's own shaving brush was found to be free from infection.

India.

50. Close liaison has been maintained between the air force and army medical authorities in regard to the inspection and

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maintenance of stations. Conditions generally have been improved. Disease incidence was about the normal figure for this country. Sandfly fever, dysentery and malaria continued to be considerable factors in the disease incidence.

Vaccination and Inoculation.

51. Drafts totalling 1,624 left the United Kingdom during the year and all were certified as protected by recent vaccination. Primary and re-vaccinations carried out in the United Kingdom amounted to 6,205, equivalent to a ratio of 275·6 per 1,000 of strength compared with 378·6 in 1923, 477·9 in 1922 and 369·4 in 1921. Abroad 1,242, of which only 21 were primary, were performed. Table XXXIII, page 76, shows the number and results of vaccination in each geographical area as well as for the force as a whole. Re-vaccinations abroad continued to show a high percentage of failures, 495 out of a total of 1,190 (41·6 per cent.) being recorded as such. This percentage is, however, considerably less than in previous years. The vaccination state of the total force continues to be satisfactory. Reference is made in chapter III, page 49, to the three cases of smallpox recorded abroad.

52. *Inoculation.*—At home, personnel to the number of 469 received one dose of T.A.B.C. vaccine, and an additional 3,376 received two doses of the vaccine. Abroad, 2,563, of which 1,718 were single doses, were given in the Mediterranean Littoral. In Iraq, 2,176, of which 1,601 were single doses, were performed. In India 166 single doses and 413 double doses were given. A high inoculation state was thus maintained amongst personnel serving abroad. The necessity for inoculation against cholera and plague in Iraq and India did not arise and consequently the number of such inoculations recorded were few.

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TABLE XXXIII.—VACCINATION RESULTS DURING 1924.

	Primary Vaccinations.							Re-Vaccinations.							Total.		
	1 Vesicle.	2 Vesicles.	3 Vesicles.	4 Vesicles.	Total successful.	Failures.	Total.	1 Vesicle.	2 Vesicles.	3 Vesicles.	4 Vesicles.	Total successful.	Failures.	Total.	Successful.	Failures.	Number vaccinated.
United Kingdom	10	31	105	576	722	20	742	152	375	625	3,806	4,958	505	5,463	5,680	525	6,205
Malta - -	—	—	1	4	5	—	5	—	1	8	31	40	3	43	45	3	48
Egypt and Palestine.	1	3	16	12	32	1	33	27	80	137	67	311	377	688	343	378	721
Iraq - - -	—	—	—	—	—	—	—	9	28	36	168	241	70	311	241	70	311
India - -	—	3	6	5	14	—	14	6	21	63	13	103	45	148	117	45	162
Total abroad -	1	6	23	21	51	1	52	42	130	244	279	695	495	1,190	746	496	1,242
Total - -	11	37	128	597	773	21	794	194	505	869	4,085	5,653	1,000	6,653	6,426	1,021	7,447
Percentage -	1·4	4·7	16·1	75·1	97·3	2·7	100	2·9	7·6	13·0	61·4	84·9	15·1	100	86·3	13·7	100

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Laboratory Work performed at Royal Air Force Hospitals.

53. During 1924, R.A.F. laboratories were situated at Finchley, Halton and Cranwell in the United Kingdom; and at Hinaidi (British and Indian), Basrah, Mosul and Ludd abroad. The total number of specimens examined in these laboratories during the year amounted to 26,271. A synopsis of the work performed in each laboratory is shown in table XXXIV. In addition to routine work, stock vaccines were prepared at the Central Laboratory and issued to units as required. The amounts of such vaccines prepared were as follow:—T.A.B.C., 32,000 c.c.; cholera, 18,000 c.c.; influenza, 25,000 c.c.; gonococcus, 2,000 c.c.; staphlococcus, 5,200 c,c.; streptococcus, 4,500 c.c.; acne, 1,000 c.c. The Central Laboratory also contributed an exhibit of phlebotomus fever at the Government Pavilion of the British Empire Exhibition.

54. At the Central Laboratory a special routine of pathological examination has been instituted and is carried out on all officers invalided from abroad; the same procedure has been applied to physiologically inefficient aviators, where the cause of inefficiency has been in doubt. The routine examination covers the following:—

(i) Blood tests—

Red blood corpuscles per c.mm.
Hæmoglobin percentage.
Colour index.
White blood corpuscles per c.mm.
Differential leucocyte count, (400 cells).
Examination for parasites.

(ii) Culture.

(iii) Agglutination against—

B. typhosus.
B. paratyphosus A.B. and C.
B. enteritidis Gærtner.
B. dysenteriæ Shiga.
B. dysenteriæ Flexner.
M. melitensis.
M. paramelitensis.

(iv) Wassermann and sigma.
(v) Hæmagglutinins.
(vi) Blood urea.
(vii) Urine tests (Routine), special examination for—

Albumen.
Blood.
Pus.
Sugar.
Casts.
Ova of bilharzia.
T.B. or other pathogenic organisms.

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(viii) Renal efficiency tests.

(ix) Fæces for pathogenic bacterial, protozoal, or helminthic infection.

(x) Sputum, if available.

(xi) Throat swabs and peridental smears if any indication of oral sepsis is present.

55. The tests are carried out at a definite hour of the day, namely, 10 a.m., the object being to render the results of all examinations comparable. This point is of importance, as certain physiological processes vary with the time of day, and where such processes are abnormal the variation may be greater. As an example, the period of time which has elapsed since the last meal will materially affect the total leucocyte count and also the urea excretion.

The routine examination is carried out as follows :—the renal efficiency tests, occupying as they do a period of two hours, are commenced first; the bladder is emptied into a sterile flask and the urine is thus available for the routine urine tests; the urea meal is given immediately, and whilst further specimens of urine are being collected at hourly intervals for the next two hours, there is ample time to carry out the remaining tests. The patient, after the administration of the urea meal, is then asked to complete a history form. The object of this form is not only to supply particulars for record purposes, but also to aid in the interpretation of the results of certain of the further tests. For example, the date of protective T.A.B.C. vaccine affects the agglutination tests, and in subjects who have recently been employed on high flying, allowance has to be made for an increase in the red blood count.

56. The blood count and hæmagglutinin tests are next taken, but the collection of blood for Wassermann, agglutination and culture is delayed until the end of the second hour, when the vein is punctured to obtain blood for the estimation of the urea content. By the end of two hours all material has been collected and many of the tests completed. The blood sugar content is not estimated unless glycosuria is present. The results of the tests are recorded on a special laboratory form, designed to reduce clerical work to a minimum. A pathological examination on such lines has the following advantages :—

(i) A systematic and thorough investigation is ensured.

(ii) The necessity of returning the case for additional tests is reduced to a minimum.

(iii) The complete investigation, especially in doubtful cases, is of material assistance to medical boards in assessing the patient's physical condition.

(iv) Negative tests act as controls for the positives.

(v) Laboratory staff know what tests to prepare for and carry out.

(vi) A batch of patients can be examined at the same time.

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57. The routine may appear to be too comprehensive, but in practice experience has proved that the scheme has been justified by the results obtained. If only one test is asked for and performed, the case may be repeatedly returned for additional tests. A further justification for such a comprehensive examination is the special necessity in the Royal Air Force for ensuring a high state of physical efficiency amongst officers, employed as they are, for the most part, in aerial work. As all material is collected within a period of two hours and the tests completed within 24 hours, no prolongation of hospital treatment is thereby incurred, and, in many cases, admission to hospital has been found unnecessary.

58. Research work has also been carried out in connection with renal efficiency and blood sugar content in various diseases at home and abroad.

TABLE XXXIV.—SUMMARY OF LABORATORY WORK CARRIED OUT IN R.A.F. HOSPITALS DURING 1924.

Nature of Specimen Examined.	United Kingdom.			Abroad.					Total.
				Hinaidi.					
	Central.	Cranwell.	Halton.	British.	Indian.	Basrah.	Mosul.	Palestine.	
Analyses :—									
Fæces	22	20	—	—	—	—	—	—	42
Gastric	22	8	5	12	—	—	—	2	49
Urine	334	386	3,338	1,875	54	257	21	185	6,450
Water	111	—	1	—	—	28	—	32	172
Sewage	76	—	1	—	—	—	—	—	77
Food	13	2	8	—	—	—	—	13	36
Blood :—									
Agglutinations	99	1	44	29	—	8	—	8	189
Counts	297	41	159	86	16	92	10	104	805
Cultures	87	4	15	49	—	14	—	5	174
Malaria parasites	144	26	131	434	256	2,769	352	590	4,702
Wassermann tests	141	24	196	295	—	147	—	149	952
Cerebro-spinal Fluid :—									
Bio-chemical	12	1	—	—	—	—	—	—	13
Complement deviation	5	—	—	—	—	—	—	—	5
Cultures	7	1	1	—	—	—	—	—	9
Cell-counts	13	1	—	—	—	—	—	—	14
Meningococcus	3	1	—	—	—	—	—	—	4
Tubercle bacillus	3	—	—	—	—	—	—	—	3
Discharge for :—									
B. Ducrey	—	—	—	—	18	—	—	—	18
Gonococcus	65	196	—	551	208	267	22	628	1,937
Spirochætes	5	1	3	57	18	8	3	21	116
Fæces for :—									
Bacteria	439	14	233	187	1	36	—	17	927
Protozoa	835	49	600	1,998	101	199	204	232	4,218
Helminths	92	33	—	348	22	23	8	—	526

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Nature of Specimen Examined.	United Kingdom.			Abroad.					Total.
				Hinaidi.					
	Central.	Cranwell.	Halton.	British.	Indian.	Basrah.	Mosul.	Palestine.	
Pathological specimens	53	7	48	12	—	12	—	7	139
Purulent discharges	56	10	34	24	2	68	—	10	204
Peridental smears	27	3	2	1	—	—	—	—	33
Smears for leishmania	6	—	—	47	1	9	—	7	70
Septic fluids	152	8	12	12	—	44	—	1	229
Sputum—General	62	49	30	57	6	4	—	70	278
T.B.	91	73	961	186	67	83	26	68	1,555
Throat swabs	272	53	388	262	—	11	—	95	1,081
Vaccines (autogenous)	87	5	19	21	—	24	—	15	171
Special tests :—									
Blood coagulation time	10	—	—	—	—	—	—	—	10
CO_2	2	—	—	—	—	—	—	—	2
Sugar	70	—	3	—	—	—	—	—	73
Urea	64	—	3	—	—	—	—	—	67
Renal efficiency	65	—	21	—	—	—	—	—	86
Bilharziasis	12	—	—	—	153	10	—	24	199
Filariasis	2	—	—	—	1	—	—	—	3
Plague	—	—	—	—	1	42	—	1	44
Cholera	—	—	—	—	1	8	—	—	9
Miscellaneous	192	—	13	14	—	357	—	4	580
TOTAL	4,048	1,017	6,269	6,557	926	4,520	646	2,288	26,271

Princess Mary's Royal Air Force Nursing Service.

59. Fifty cases of sickness were admitted to hospital from an average strength of 119 during 1924. Of the 50 cases, 26 were recorded at home and 24 abroad. The average duration of each case was 15·6 days as compared with 17·1 days in 1923. There were no deaths and no invalids from the service. Of the 24 cases reported abroad, 7 were primary cases of benign tertian malaria. Of these, 6 occurred at Basrah and one at Sarafand. An additional 5 cases were due to sandfly fever. There were two admissions for primary amœbic dysentery. Of the 26 cases at home, 5 were due to influenza, 2 to appendicitis, 2 to tonsillitis, 3 to septic conditions, and 2 to myalgia.

The Transfer of Casualties by Air.

60. The transfer of casualties by air, which initially was in the nature of an experiment, has become the recognised method in Iraq. The conditions obtaining in this country are particularly suitable for this form of transport. Facilities for ground communication are inadequate, in that roads, where

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present, are of the worst description, railways few in number and trains slow, rivers shallow and winding, without access to important points. By employing air transport cases can be rapidly transferred from outlying districts to hospitals where there are the necessary medical, surgical and nursing facilities and where the services of specialists are available. Further, the necessity of constantly sending specialists to outlying districts to deal with emergencies is rendered unnecessary. Air transport also has the great advantage of combining speed with comfort.

61. The types of aircraft in use are :—

(i) Specially designed aerial ambulances capable of carrying both stretcher cases and sitting cases, accompanied by an attendant.

(ii) Large twin-engine aircraft adapted to carry lying or sitting cases.

(iii) Small aircraft which can carry sitting cases or one lying case in an emergency.

62. The employment of small aircraft for the carriage of stretcher cases cannot be regarded as otherwise than an improvised means in an emergency. Such aircraft cannot accommodate a stretcher within the fuselage and the method in use is to secure a Neil Robertson bamboo canvas stretcher to the upper part of the fuselage directly behind the pilot. It has, however, been used with success in cases where the casualty was located in a district where the employment of larger aircraft was impossible and also where the need for immediate medical attention forbids delay. Amongst many disadvantages may be mentioned the impossibility of any attention en route and also the precarious position of the patient in the event of the aircraft turning over on landing. The value of the method lies in the fact that an urgent case can be rapidly transferred to the nearest centre where medical facilities are available and from which further transport can be effected in larger aircraft.

63. Sitting and lying cases are normally evacuated in the larger types of aircraft. Where there is no urgency, cases are retained and evacuated by aircraft engaged in routine duty flights, or until sufficient cases have accumulated to justify the requisitioning of an aerial ambulance. The total number of casualties transferred by air during 1924 amounted to 81 cases.

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TABLE XXXV.—SURGICAL OPERATIONS DURING 1924.

Nature of Operation.	Place of Operation.			Totals.
	R.A.F. Sick Quarters.	R.A.F. Hospitals.	Royal Navy, Army or other Hospitals.	
Removal of tumours, cysts and bursæ	6	71	17	94
Evacuation of abscesses and boils	71	188	44	303
Suture of wounds	19	25	17	61
Varices	—	8	2	10
Removal of nails	7	73	19	99
Reduction of fractures and dislocations	49	105	71	225
Wiring or plating fractures	—	30	14	44
Amputations	3	29	12	44
On the eye	3	15	10	28
On joints	1	33	10	44
Removal of tonsils or adenoids	—	64	27	91
For hernia	—	53	20	73
On ear or mastoid process	—	9	3	12
On nose	—	33	22	55
For appendicitis	—	104	46	150
Other abdominal operations	—	16	6	22
For hæmorrhoids	—	34	13	47
Circumcision	3	40	15	58
For hydrocele	—	2	2	4
For varicocele	—	7	6	13
All other operations	6	72	25	103
Total	168	1,011	401	1,580

Royal Air Force Reserve of Officers.

64. During 1924 candidates for the Reserve of Officers were examined, to determine their physical fitness for aerial duties, by

(i) The Central Medical Board, or

(ii) A travelling medical board which visited Newcastle, Birmingham, Edinburgh, Glasgow, Manchester and Bristol.

The total number of examinations amounted to 320; of these, 170 were performed by the Central Medical Board and 150 by the travelling board. The health of officers during the annual period of training continued to be satisfactory, a total of 12 cases of sickness and injury being recorded. Four of the 12 cases

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resulted from flying accidents, two of the cases being subsequently invalided. There were no deaths. Routine physical examinations were carried out by the Senior Medical Officer during his visits to the flying schools. The total of such examinations numbered 154 and the results obtained showed that a standard closely comparable to that of the regular officer was maintained.

Dental Treatment.

65. Table XXXVI shows a summary of dental treatment carried out during 1924. Compared with 1923 the figures show an increase in the number of fillings carried out and a decrease in the number of extractions.

Other Cases treated in Royal Air Force Hospitals and Sick Quarters.

66. In addition to personnel of the Royal Air Force, other patients as shown in table XXXVII received treatment in R.A.F. hospitals and sick quarters during 1924.

TABLE XXXVII.—PERSONNEL OTHER THAN ROYAL AIR FORCE TREATED IN R.A.F. HOSPITALS AND SICK QUARTERS.

IRAQ.

—	Admission No.	Deaths.	Average sick daily.
British army troops - -	1,178	1	60·5
Indian troops - - - -	1,351	7	92·8
Indian followers - - -	1,088	14	77·2
Royal Navy - - - -	13	3	0·9

PALESTINE.

British army troops - -	687	3	19·1
British gendarmerie - -	144	—	8·6

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Table XXXVI.—Dental Treatment—1924.

Nature of treatment.	United Kingdom (Average strength, • 22,559).		Mediterranean Littoral (Average strength, 3,491).		India (Average strength, 1,912).	Iraq (Average strength, 3,660).	Total (Average strength for the year, 31,622).	
	By R.A.F. dental surgeons.	By Army, Navy or civilian dental surgeons.	By R.A.F. dental surgeons.	By Army, Navy or civilian dental surgeons.	By Army, Navy or civilian dental surgeons.	By R.A.F. dental surgeons.	By R.A.F. dental surgeons.	By Army, Navy or civilian dental surgeons.
Fillings - - - - -	18,323	1,516	3,525	289	699	1,648	23,496	2,504
Scalings - - - - -	2,016	191	535	20	119	450	3,001	330
Extractions - - - - -	9,363	728	1,853	101	387	2,409	13,625	1,216
Root fillings - - - -	1,492	103	241	25	72	192	1,925	200
*Number of dentures supplied	365	75	180	7	18	219	764	100
	(276)	(52)	(140)	(5)	(17)	(176)	(592)	(74)
Number of repairs to dentures	61	19	65	5	10	157	283	34
Remodels - - - -	95	15	72	1	7	87	254	23

* Figures in brackets are the actual number of patients supplied with dentures.

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REPORT

ON THE

HEALTH OF THE ROYAL AIR FORCE

FOR THE YEAR

1925.

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REPORT

ON THE

HEALTH OF THE ROYAL AIR FORCE

FOR THE YEAR

1925.

The following Report on the Health of the Royal Air Force for the Year 1925 is issued for the information and guidance of all concerned.

By Command of the Air Council,

W. Nicholson

AIR MINISTRY,
Published March, 1927.

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AIR MINISTRY,
KINGSWAY,
LONDON, W.C.2.

To The Secretary of the Air Council.

SIR,

I HAVE the honour to submit the accompanying Report on the Health of the Royal Air Force during the year 1925.

The incidence of sickness and the number of days sickness per head are the lowest that have been recorded since 1920 when these Reports were instituted. The average duration of each case is, however, slightly higher than in previous years.

Venereal disease incidence is the lowest so far recorded, and the incidence of sandfly fever, which has been the main cause of the high sickness figures in India and Iraq, has been reduced to what may be considered normal for those countries.

The incidence of deaths and invaliding from the service is lower than in any previous year.

Of the candidates for flying duties, 15 per cent. fewer were accepted as medically fit than in 1924, and of recruits, 11 per cent. fewer.

Ninety-one per cent. of the officers of the General Duties Branch were fit for full flying duties—the highest figure so far recorded.

I have the honour to be, Sir,
Your obedient Servant,

DAVID MUNRO,
Director of Medical Services,
Royal Air Force.

January, 1927.

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TABLE I.—SICKNESS AT HOME AND ABROAD—ANALYSED BY GEOGRAPHICAL AREAS, 1925, 1924, and AVERAGE FOR THE THREE YEARS, 1921/2/3.

Geographical Area.	Average strength.	Fresh cases of sickness.			Deaths.	Invalided out of service.	Invalided to United Kingdom.	Average duration of each case in days.		Average No. of days sickness per head.		Incidence per 1,000 of strength.						
												Fresh cases of sickness.		Deaths.	Invalided out of service.	Invalided to United Kingdom.	No. sick daily.	
		Less than 48 hours.	More than 48 hours.	Total.				48-hours cases included.	48-hours cases excluded.	48-hours cases included.	48-hours cases excluded.	48-hours cases included.	48-hours cases excluded.				48-hours cases included.	48-hours cases excluded.
United Kingdom,																		
1925	23,838	9,205	9,247	18,452	74	239	—	9·0	16·7	7·0	6·4	774·1	386·1	3·1	10·0	—	19·1	17·6
1924	*22,559*	*10,766*	*8,839*	*19,605*	*84*	*240*	—	*8·2*	*16·5*	*7·1*	*6·5*	*869·1*	*391·8*	*3·7*	*10·6*	—	*19·5*	*17·6*
1921/2/3	*21,083*	*10,107*	*7,883*	*17,990*	*64*	*310(a)*	—	*8·9*	*18·7*	*7·6*	*7·0*	*853·2*	*373·9*	*3·1*	*14·7(a)*	—	*20·8*	*19·1*
Mediterranean Littoral, 1925	3,632	2,178	1,613	3,791	21	22	56	8·9	18·8	9·3	8·4	1043·7	444·1	5·8	6·1	15·4	25·5	22·9
1924	*3,491*	*2,193*	*1,722*	*3,915*	*15*	*24*	*61*	*9·5*	*19·7*	*10·6*	*9·7*	*1121·5*	*493·3*	*4·3*	*6·9*	*17·5*	*29·1*	*26·5*
1921/2/3	*3,729*	*2,546*	*2,381*	*4,927*	*20*	*22*	*59*	*9·8*	*18·7*	*13·0*	*12·0*	*1321·3*	*638·6*	*5·3*	*5·8*	*15·7*	*35·3*	*32·7*
Iraq, 1925	3,599	2,415	2,661	5,076	28	31	114	12·4	22·4	17·4	16·5	1410·4	739·4	7·8	8·6	31·7	47·7	45·3
1924	*3,660*	*2,731*	*2,874*	*5,605*	*27*	*26*	*84*	*11·2*	*20·6*	*17·1*	*16·1*	*1531·7*	*785·5*	*7·4*	*7·1*	*23·0*	*46·8*	*44·1*
1921/2/3	*2,396*	*3,348*	*2,676*	*6,024*	*24*	*14*	*79*	*8·2*	*16·9*	*20·7*	*18·9*	*2514·6*	*1117·1*	*10·2*	*5·7*	*32·8*	*56·6*	*51·5*
India, 1925	1,959	1,152	1,292	2,444	15	15	85	8·9	15·6	11·1	10·3	1247·6	659·5	7·7	7·7	43·4	30·4	28·2
1924	*1,912*	*1,888*	*1,224*	*3,112*	*17*	*10*	*23*	*7·6*	*17·1*	*12·3*	*10·9*	*1627·6*	*640·2*	*8·9*	*5·2*	*12·0*	*33·7*	*29·8*
1921/2/3	*1,799*	*3,173*	*1,413*	*4,586*	*16*	*13*	*51*	*6·4*	*17·4*	*16·3*	*13·7*	*2549·0*	*785·4*	*9·1*	*7·2*	*28·5*	*44·5*	*37·3*
Total Abroad,																		
1925	9,190	5,745	5,566	11,311	64	68	255	10·5	19·8	12·9	12·0	1230·8	605·7	7·0	7·4	27·7	35·2	32·8
1924	*9,063*	*6,812*	*5,820*	*12,632*	*59*	*60*	*168*	*9·8*	*19·6*	*13·6*	*12·6*	*1393·9*	*642·3*	*6·5*	*6·6*	*18·5*	*37·2*	*34·3*
1921/2/3	*7,923*	*9,066*	*6,470*	*15,536*	*60*	*48*	*189*	*8·2*	*17·7*	*16·0*	*14·4*	*1960·8*	*816·6*	*7·6*	*6·1*	*23·8*	*43·7*	*39·5*
Total Force, 1925	33,028	14,992	14,771	29,763	138	307	256	9·6	17·8	8·6	8·0	901·1	447·2	4·2	9·3	27·7(b)	23·6	21·8
1924	*31,622*	*17,578*	*14,659*	*32,237*	*143*	*300*	*168*	*8·8*	*17·7*	*9·0*	*8·2*	*1019·5*	*463·6*	*4·5*	*9·5*	*18·5(b)*	*24·6*	*22·4*
1921/2/3	*29,006*	*19,173*	*14,353*	*33,526*	*125*	*359(a)*	*189*	*8·6*	*18·2*	*9·9*	*9·0*	*1155·8*	*494·8*	*4·3*	*12·3(a)*	*23·8(b)*	*27·0*	*24·7*

NOTES.—(*a*) Excludes 711 invalids through Discharge Centre Medical Board during 1921.
(*b*) Calculated on strength abroad.

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CHAPTER I.—THE HEALTH OF THE ROYAL AIR FORCE AS A WHOLE DURING 1925.

General.

1. Table I, page viii, gives an analysis of the total sickness which occurred in the Royal Air Force during 1925. Corresponding figures for the year 1924 and the average of the years 1921–2–3 are also shown for the purpose of comparison.

2. The term Mediterranean Littoral includes Malta, average strength (692), in which are included sickness figures for R.A.F. personnel of the aircraft carriers in the Mediterranean, Egypt (2,092), Palestine (593), and drafts en route to and from the United Kingdom. The term total abroad, therefore, relates to R.A.F. personnel in the Mediterranean Littoral, India and Iraq.

3. The average strength of the force as a whole during 1925 was 33,028 and the total number of cases of sickness recorded was 29,763, equivalent to a case incidence of 901·1 per 1,000 of strength, as compared with 1019·5 in 1924 and 1155·8 over the three-year period. If, however, cases of less than 48 hours' duration are excluded, and these minor cases have but little effect on the total non-effective figures, as is evident on reference to the last two columns of the table, the case incidence becomes 447·2, compared with 463·6 in 1924 and 494·8 over the three-year period. The number sick daily per 1,000 of strength, both including and excluding 48-hour cases, also shows a reduction on the corresponding figures for 1924 and over the three-year period. Including 48-hour cases the figure for 1925 is 23·6, and excluding 48-hour cases, 21·8 per 1,000 of strength.

A fractional decrease has taken place in the death incidence, the figure being 4·2 for 1925, compared with 4·5 in 1924. A slight decrease has also occurred in the incidence of invalids.

The average duration of each case has increased from 8·8 days in 1924 to 9·6 days, but if 48-hour cases are excluded the duration is approximately the same in both years.

4. An analysis of deaths and invalids during 1925, 1924 and the average for the years 1921–2–3 is given in table II, page 10. The table shows under separate headings the number of cases, deaths and invalids resulting from each disease group, and the same information is also given in respect of the total injuries.

A total of 36 deaths attributable to disease was recorded as compared with 102 deaths resulting from injuries. The total

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number invalided for disease was 282, compared with 25 as the result of injury. The 36 deaths due to disease were as follows :—

Appendicitis	7
Typhoid fever	4
Meningitis	3
Intestinal obstruction	3
Lobar pneumonia	2
Septicæmia	2
Cerebral hæmorrhage	2
Malaria, malignant tertian	1
Paratyphoid " B "	1
Pulmonary tuberculosis	1
Cerebral abscess	1
Pericarditis, acute	1
Arteriosclerosis	1
Pernicious anæmia	1
Cirrhosis of liver	1
Acute yellow atrophy	1
Nephritis, acute	1
Mediastinal Sarcoma	1
Carcinoma of stomach	1
Cerebellar cyst	1
Total	36

The following diseases were the chief causes of invaliding during 1925—

Neurasthenia	32	
Tuberculosis, pulmonary	30	42
,, other	12	
Inflammation of middle ear	23	
Mental diseases	19	
Flat foot	7	
Epilepsy	7	

5. An analysis of the main disease and injury groups is given in table III, page 11. The case incidence for all diseases during 1925 was 379·1 per 1,000 of strength as compared with 390·7 in 1924. The injury incidence was 68·1 compared with 72·9 in the previous year.

The average duration of each case of disease was 17·4 days as compared with 17·5 days in 1924, the corresponding figures in respect of injuries were 20·5 and 19·1 days respectively.

6. An analysis by age of the incidence of disease and injury is shown in table IV, page 12. The total strength of officers was not sufficient to justify their division into age groups; the sickness of officers is, therefore, shown as a whole. The highest disability incidence, 745·3 per 1,000 of strength, occurred amongst apprentices (under the age of 18), and it should be noted that they do not serve abroad. The highest disease incidence is recorded in this group, being nearly double that for the total

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force, although the injury incidence is considerably less than that for the force as a whole. The next and highest disability incidence, 463·7, occurs in the group aged 24–25 years.

It is of interest that excluding apprentices this same group returned the highest disability incidence in 1924. The highest injury incidence occurred in the officers' group both at home and abroad. The lowest disability incidence was found in the group aged 18–19.

7. The Nosological Table number XII, page 21, analyses the disabilities, deaths and invalids in the force at home, abroad, and as a whole.

8. Table V, page 14, shows in greater detail the diseases or groups of diseases marked with an asterisk in table XII.

Venereal Disease.

9. The case incidence of all types of venereal disease shows a further reduction from 22·3 per 1,000 of strength during 1924 to 19·9 in the year under review. During the same period the primary incidence, *i.e.*, cases reporting for the first time after infection and omitting relapses and admissions for continued treatment of syphilis, has fallen from 16·3 to 15·1 per 1,000 of strength. An analysis of the incidence of the various types of venereal disease at home and abroad during 1925 is given in table VI, page 16. At home a total of 400 cases, equivalent to a case incidence of 16·8 was recorded, compared with 19·2 during 1924. Abroad, 256 cases were notified, representing a case incidence of 27·9, compared with 30·0 in 1924. The average duration of each case was 51·9 days, compared with 53·8 days in the previous year. The average number sick daily was 93·4, compared with 103·3 during 1924. Preventive measures, prophylactic, educational, recreational and disciplinary, which have been fully described in previous reports have been further developed and intensified, and the progressive decrease in the incidence of this group of diseases during the past five years must be, in large part, attributed to the success attending such measures.

Upper Air Passage Infections.

10. The case incidence of this group of diseases shows but little alteration during the past two years, being 68·1 per 1,000 of strength in 1925, compared with 67·5 in 1924. At home, the case incidence was 73·4, compared with 69·1 in 1924; Mediterranean Littoral 68·0, compared with 86·2; Iraq 47·0, compared with 54·6; and India 41·9, compared with 39·7. The average duration of each case has remained unchanged, being 7·4 days in both years. Amongst the diseases comprising the group pharyngitis and naso pharyngitis accounted for a case incidence of 39·5 per 1,000 of strength, compared with 40·9 in 1924. The case incidence of tonsillitis was 24·2, compared with 23·0 in the previous year. A further analysis of this group of diseases is

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given in table VII, page 17, which shows the monthly case incidence per 1,000 of strength in each of the various geographical areas. Comparative figures for 1924 and the average over the period 1921–2–3 are also given in the table.

Pulmonary Tuberculosis.

11. Twenty-seven cases of pulmonary tuberculosis—14 at home and 13 abroad—were reported during 1925. One death occurred and 30 cases were finally invalided from the Service during the year, but seven of the 30 cases invalided were reported in 1924 and remained over under treatment into 1925. The figures for cases, deaths and invalids for 1924 were 42, 4, 38 respectively.

In 24 out of the 27 cases reported, tubercle bacilli were found in the sputum, while in the remaining 3 X-ray examination confirmed the clinical diagnosis of fibrosis. The cases reported during 1925 are analysed below by age and trade groups, length of service and locality. In five of the cases a definite family history of tuberculosis of the lungs was elicited.

Age.	Under 18.	18 & 19.	20 & 21.	22 & 23,	24 & 25.	26 & 27.	28 & 29.	30 & 31.	32 & 33.	34 & 35.	36 & 37.	38.
No.of cases												
Home -	1	2	1	6	1	1	—	1	—	—	—	1
Abroad	—	—	2	4	2	3	1	—	—	—	1	—
	1	2	3	10	3	4	1	1	0	0	1	1

Trade.	Officers (General Duties Branch).	Fitters.		Rigger.	Carpenter.	Storekeeper.	Driver Petrol.	Wireless Operator Mechanic.	Clerk.	Aircraft Hand.
		Aero Engine.	Armourer.							
No. of cases	3	7	1	1	1	1	2	2	3	6

Years' Service -	1–2 years.	2–4 years.	4–8 years.	Over 8 years.
No. of cases -	2	9	13	3

Locality -	Home.	Iraq.	India.	Egypt.	Palestine.	Malta.
No. of cases	14	9	1	0	1	2

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Disease and Injury amongst different Types of Unit.

12. An analysis of sickness, subdivided into disease and injury, amongst different types of unit, at home and abroad, is shown in table VIII, page 18.

The force as a whole gives a disease incidence of 379·1, and an injury incidence of 68·1 per 1,000 of strength, a proportion of disease to injury of 5·6 to 1, compared with 5·4 to 1 in 1924. A reduction in both disease and injury incidence has occurred during 1925, the reduction being more marked in the disease incidence. The force at home gives a disease incidence of 319·3 and an injury incidence of 66·9 per 1,000 of strength, representing a proportion of disease to injury of 4·8 to 1, as compared to 4·7 to 1 during 1924. A slight decrease in both disease and injury incidence has been recorded, being more marked in the case of the former. The force abroad records a disease incidence of 534·3 and an injury incidence of 71·4 per 1,000 of strength, equivalent to a proportion of disease to injury of 7·5 to 1, the corresponding figure in 1924 being 6·6 to 1. A reduction has occurred in both disease and injury incidence during 1925, the decrease being more marked in the disease incidence. Disease incidence in the force abroad was 67 per cent. in excess of the incidence in the force at home, and injury incidence nearly 7 per cent. in excess of that for the home force.

At home, the highest disease-injury proportion, 7·2 to 1, occurred in the group comprising headquarters and miscellaneous units, the lowest, 3·3 to 1, in flying units. Abroad, the group comprising headquarters and miscellaneous small units also records the highest disease-injury proportion, 8·5 to 1, the lowest proportion, 6·5 to 1, being shown by flying units.

Disease and Injury amongst the Different Trade Groups.

13. Table IX, page 19, gives an analysis of disease and injury amongst the different trade groups. The diseases analysed have been chosen as the chief factors causing medical non-effectiveness. The composition of the trade groups has been described in detail in the Report for 1923 and remains unaltered. It should be borne in mind that injuries sustained in athletics are a risk common to all trade groups and that during 1925, 38 per cent. of all cases of injury occurred during games.

Points of interest in the table are—

(i) The highest disability incidence occurred amongst apprentices, the chief factor being a high disease incidence.

(ii) The highest injury incidence was found in the group comprising officers, cadets and airman pilots.

(iii) The highest incidence of influenza and upper air passage infections, as well as a high incidence of diseases of the digestive system, occurred amongst apprentices.

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(iv) As in previous years, the highest venereal disease incidence again occurs in the driver group.

(v) The lowest disability rate was found amongst carpenters and riggers.

Cause of Injury.

14. An analysis of injury, classified by nature and cause of injury, is shown in table X, page 20. Injuries sustained in organised games are regarded as having occurred on duty as opposed to those in unorganised games, *i.e.*, off duty. For analytical purposes, certain disabilities which, in the official nomenclature of disease, are classified as injuries, *e.g.*, heatstroke and heat exhaustion, have been excluded from the table as they cannot strictly be regarded as injuries. During 1925, a total of 2,239 cases, equivalent to a case incidence of 67·8 per 1,000 of strength, was recorded, compared with an incidence of 71·3 in 1924. Of the total, 61 per cent. occurred on duty, 38 per cent. off duty, and in the remaining 1 per cent. details of whether on or off duty were not recorded. As regards site of injury, the lower extremity, as in previous years, was most frequently involved. During 1925, injuries to the lower limbs accounted for 48 per cent. of all cases of injury. The corresponding percentages during 1924, 1923, 1922 and 1921 were 48·6, 50·3, 49·4 and 47·0—a fairly constant percentage of approximately 50 per cent. Injuries sustained in athletics accounted for 38 per cent. of the total due to all causes, as compared with 36·4 per cent. in the previous year. Injuries resulting from flying accidents amounted to 6·9 per cent. of the total cases of injury, as compared with a corresponding figure of 7·5 per cent. during 1924.

Apart from injury, 414 cases of disease, the result of recent or remote injury, were recorded, compared with 398 in the previous year.

15. *Injuries sustained in flying accidents.*—An analysis of flying accidents on duty is given in table XI, page 20. Corresponding figures for 1921–2–3–4 are also shown for comparison.

Considered in relation to the amount of flying carried out, the casualty risk in 1925 was lower than in previous years.

The total number of casualties to Royal Air Force personnel was 155, of which 55 were deaths. Eight of these deaths resulted from two collisions of aircraft in the air; there were 10 deaths in four collisions in 1924. The deaths represent 35 per cent. of the total flying casualties, as compared with an average of 43 per cent. for the previous four years. No casualties occurred in flying accidents off duty.

With the exception of one officer, in the stores branch, all the officers killed or injured were in the general duties branch. Of the airmen, nine were qualified pilots or under training as pilots: of the remaining 46, 24 were in the fitter trade group, 14 were

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in the carpenter or rigger group, and the remaining eight were spread over the other groups.

16. *Injuries caused by airscrews.*—A total of 33 cases, resulting in one death and three invalids from the service, was reported during 1925, compared with 42 cases with two deaths in 1924. The average duration of each case was 49 days, compared with 55·3 days in the previous year. Injuries due to airscrews may be sustained in three ways :—

(i) Through being struck by the blades whilst handling the airscrew to start the engine. Twenty-four of the cases sustained injury whilst so engaged. The number of cases in 1924 amounted to 32.

(ii) Through other means whilst starting the engine. This type of injury is usually due to a fall or through striking a projecting part of the aircraft. Two cases sustained injury in this manner during 1925, compared with three in 1924.

(iii) Through being struck by the blades when not engaged in starting the engine. Seven cases were recorded —the same number as in 1924.

The 33 cases were distributed among the various trade groups as follows—fitters 14, carpenters and riggers 8, aircrafthands 4, officers 3, and single cases amongst drivers, metal workers, air gunners and armoured car crews.

17. *Injuries sustained whilst starting other engines.*—Injuries under this heading usually result from being struck by a recoil of the starting handle of a car due to a " back fire."

A total of 43 cases was recorded during 1925, compared with 51 in 1924. There were no deaths or invalids in either year. The average duration of each case remained practically unaltered, being 26·5 days, compared with 26·0 days in 1924. Of the 43 cases, 31 occurred on duty and 12 off duty. The cases were distributed amongst trade groups as follows :—drivers 24, officers 8, aircrafthands 3, carpenters and riggers 2, fitters 2, metal workers 2, with single cases amongst armoured car crews and amongst apprentices. The commonest injuries were a fracture of the lower end of the right radius, 14 cases, and Colles fracture, 10 cases ; other fractures of the forearm accounted for a further 5 cases. Of the 14 remaining cases, 13 were sprains and contusions. Twenty-four cases were recorded during the winter, compared with 19 during the summer months.

18. *Injuries caused by motor vehicles other than whilst starting engines.*—A total of 400 cases, resulting in 18 deaths and 9 invalids from the service, was recorded, as compared with 309 cases and 12 deaths in 1924. The average duration of each case was 31·9 days compared with 26·7 days in the previous year.

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The 400 cases may be divided as follows :—

(i) *Motor-cycles.*—Accidents in which motor-cycles were involved accounted for 297 cases, equivalent to 74 per cent. of all cases caused by motor transport. Of these, 237 cases, resulting in 10 deaths, occurred whilst off duty, 34 cases with two deaths whilst on leave, and 26 cases with one death whilst on duty.

(ii) *Occupants of lorries and tenders.*—Twenty-eight cases, one of which was fatal, were reported. Twenty-five cases, including the fatal case, occurred whilst on duty, and three cases whilst off duty.

(iii) *Occupants of motor-cars.*—Twenty-six cases, with one resultant death and two invalids, occurred during the year. Nineteen of the cases occurred whilst off duty, five whilst on leave, and two whilst on duty.

(iv) *Non-occupants of vehicles.*—Forty-nine cases, resulting in three deaths and two invalids from the service, were reported. Forty-two cases were caused by civil transport, four by R.A.F. transport, whilst details of the ownership of the vehicles are lacking in the three remaining cases.

19. *Injuries sustained in athletics.*—A total of 851 cases, resulting in five deaths, was recorded, compared with 820 cases with three resultant deaths in 1924. Of the total, 739 cases occurred whilst on duty and 109 whilst off duty. No details as to whether on or off duty were given in the three remaining cases. The case incidence per 1,000 of strength was 25·8, compared with 25·9 during 1924. The five deaths occurred whilst bathing, all being due to drowning. Injuries sustained in football matches accounted for 589 cases, equivalent to 69 per cent. of the total injuries due to athletics. The corresponding percentages during 1921–2–3–4 were 71, 74, 69 and 70, respectively. A fairly constant percentage during the five years. The commonest types of injury sustained during football were sprained ankle 139 cases, acute synovitis of the knee joint 144, and contusions 97 cases.

20. *Wounds in action.*—Four cases, resulting in four deaths, were recorded, compared with five cases and no deaths during 1924. Two aircraft, one in Iraq, the other in India, were brought down by hostile gunfire from the ground whilst engaged in active operations. Both occupants of each machine were killed.

21. *Accidental gunshot wounds, &c.*—Thirteen cases with one death were reported, as compared with 22 cases with three deaths in 1924. The fatal case was that of an airman injured during blasting operations.

22. *Injuries sustained during parachute descents.*—Five cases, one of which proved fatal, were recorded during 1925. The

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fatal case was that of an airman who failed to pull the rip cord of the parachute during a practice descent.

23. *Injuries caused by animals.*—A total of 13 cases and one invalid from the service was recorded as compared with 33 cases and no invalids during 1924. The average duration of each case was 27·8 days, compared with 19·6 days during the previous year. Twelve cases resulted from dog bites, all of whom received Pasteur treatment. The remaining case was one of scorpion sting. The single invalid was the case of shark bite mentioned in the Report for 1924, who was still under treatment during 1925. A severe degree of deformity of the leg resulted from the extensive destruction of tissue.

24. *Other injuries sustained on duty.*—There-hundred-and-twenty-five cases, resulting in three deaths, were recorded, compared with 394 cases with four deaths in 1924. The average duration of each case was 18·3 days, compared with 16·5 days in 1924.

25. *Other injuries sustained off duty.*—A total of 333 cases, resulting in 16 deaths, occurred, as compared with 319 cases with three deaths during 1924. The average duration of each case was 13·7 days in 1925 and 16·4 days in 1924. Three of the deaths resulted from being run over by railway trains.

26. *Other injuries on leave.*—Fifty-four cases, with one resultant death, were reported, compared with 44 cases with no deaths in 1924. The average duration of each case was 16·6 days, compared with 16·7 days in 1924. The single death was due to decapitation by a train.

27. The other injuries noted above as having occurred off duty or on leave include ten cases of suicide or attempted suicide, resulting in seven deaths.

28. A further ten cases of injury were reported which have not been included above as complete details are not available.

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TABLE II.—RELATIVE INCIDENCE OF DEATHS AND INVALIDS, 1925, 1924 AND AVERAGE OF 1921/2/3.

Disease Group.	1925.			Percentage of Total.								
				Cases.			Deaths.			Invalids.		
	Cases.	Deaths.	Invalids.	1925.	1924.	1921/2/3.	1925.	1924.	1921/2/3.	1925.	1924.	1921/2/3.
Dysentery	222	—	—	1·5	*1·1*	*1·5*	—	—	*0·5*	—	—	*0·3*
Enteric group	41	5	—	0·3	*0·2*	*0·2*	3·6	*2·8*	*1·6*	—	—	—
Influenza	1,153	—	—	7·7	*7·5*	*5·1*	—	—	*0·3*	—	—	—
Malaria	1,014	1	—	6·9	*8·0*	*6·0*	0·7	*0·7*	*0·8*	—	—	*0·2*
Pneumonia	53	2	—	0·4	*0·5*	*0·5*	1·5	*3·5*	*7·0*	—	—	—
Pyrexia of unknown origin	59	—	—	0·4	*0·5*	*0·9*	—	—	*0·3*	—	—	—
Tuberculosis	38	2	42	0·3	*0·4*	*0·4*	1·5	*4·9*	*3·2*	13·6	*16·0*	*13·7*
Venereal diseases	656	—	1	4·4	*4·8*	*6·0*	—	—	—	0·3	*2·0*	*1·0*
Pyæmia and septicæmia	4	2	—	0·0	*0·0*	*0·0*	1·5	*0·7*	*3·2*	—	—	—
Other diseases due to infection	4,749	2	4	32·2	*31·1*	*34·3*	1·5	*0·7*	*2·1*	1·3	*2·0*	*1·5*
Contacts and carriers	27	—	—	0·2	*0·1*	*0·5*	—	—	—	—	—	*0·1*
Nervous system and brain	235	4	77	1·6	*2·0*	*2·1*	2·9	*3·5*	*1·6*	25·1	*28·3*	*23·8*
Eye	139	—	27	0·9	*0·9*	*1·2*	—	—	—	8·8	*5·0*	*7·8*
Ear and nose	259	—	33	1·8	*2·0*	*1·8*	—	—	—	10·8	*13·0*	*11·2*
Circulatory system	143	3	17	1·0	*0·8*	*1·4*	2·2	*2·1*	*2·9*	5·5	*4·0*	*9·4*
Lymphatic system	6	—	3	0·0	*0·1*	*0·1*	—	—	*0·3*	1·0	*0·7*	*1·2*
Respiratory system (excluding tuberculosis and pneumonia)	478	—	16	3·2	*3·1*	*2·7*	—	*3·5*	*0·8*	5·2	*5·3*	*3·8*
Teeth and gums	89	—	—	0·6	*0·5*	*0·7*	—	—	—	—	—	*0·2*
Digestive system	1,187	12	13	8·0	*7·1*	*7·4*	8·7	*3·5*	*4·8*	4·2	*3·0*	*3·7*
Disorders of nutrition and metabolism	7	—	3	0·0	*0·1*	*0·0*	—	*0·7*	—	1·0	*1·0*	*0·4*
Generative system	250	—	1	1·7	*1·7*	*1·5*	—	—	—	0·3	—	*0·2*
Organs of locomotion	467	—	29	3·2	*3·3*	*2·7*	—	—	—	9·5	*11·7*	*11·5*
Areolar tissue and skin	890	—	1	6·0	*5·9*	*6·9*	—	—	—	0·3	—	*1·7*
Urinary organs	90	1	12	0·6	*0·5*	*0·5*	0·7	*0·7*	*0·8*	3·9	*2·0*	*3·2*
Tumours and cysts	91	2	—	0·6	*0·7*	*0·5*	1·5	*1·4*	*1·1*	—	*0·7*	*0·6*
Poisons	46	—	—	0·3	*0·3*	*0·3*	—	—	*1·1*	—	—	*0·1*
Debility	59	—	3	0·4	*0·5*	*0·7*	—	—	—	1·0	—	*0·3*
Other diseases	69	—	—	0·5	*0·7*	*0·9*	—	—	—	—	—	*0·1*
Total, all diseases	12,521	36	282	84·8	*84·3*	*86·8*	26·1	*28·7*	*32·4*	91·9	*94·7*	*96·4*
Total, all injuries	2,250	102	25	15·2	*15·7*	*13·2*	73·9	*71·3*	*67·6*	8·1	*5·3*	*3·6*
Total, all disabilities	14,771	138	307	100·0	*100·0*	*100·0*	100·0	*100·0*	*100·0*	100·0	*100·0*	*100·0*

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TABLE III.—SICKNESS AT HOME AND ABROAD, ANALYSED BY DISEASE AND INJURY GROUPS, 1925, 1924 AND AVERAGE OF 1921/2/3.

Disease Group.	Case Incidence per 1,000 of Strength.									Average duration of each case (days).								
	Home.			Abroad.			Total Force.			Home.			Abroad.			Total Force.		
	Average of 1921/2/3.	1924.	1925.	Average of 1921/2/3.	1924.	1925.	Average of 1921/2/3.	1924.	1925.	Average of 1921/2/3.	1924.	1925.	Average of 1921/2/3.	1924.	1925.	Average of 1921/2/3.	1924.	1925.
Diseases caused by infection	171·5	190·9	191·4	539·0	398·9	372·8	272·0	250·1	241·9	18·2	14·8	14·1	15·6	16·6	17·3	21·0	15·6	15·5
Contacts and carriers	2·7	0·5	0·9	1·1	0·6	0·7	2·2	0·5	0·8	10·9	13·5	9·8	16·8	33·0	10·3	11·7	19·2	9·9
Effects of parasites	0·6	0·4	0·4	1·1	6·4	1·8	0·8	2·1	0·8	5·6	9·8	14·2	8·6	25·8	36·7	6·7	23·6	28·4
Diseases of the nervous system and brain	9·4	9·0	6·0	13·3	10·7	10·0	10·4	9·5	7·1	29·7	28·6	33·8	52·4	61·9	56·6	37·6	39·4	42·7
Diseases of the eye	5·8	4·1	3·7	6·1	4·4	5·7	5·9	4·2	4·2	18·6	17·0	17·7	32·7	34·2	34·0	22·6	22·2	23·7
Diseases of the ear and nose	8·6	9·0	6·7	9·5	10·8	10·8	8·9	9·5	7·8	20·8	20·2	23·4	21·9	24·1	34·6	21·1	21·5	27·7
Diseases of the circulatory system	5·3	3·0	3·0	11·2	6·2	7·7	6·9	3·9	4·3	23·9	26·5	25·9	48·7	46·5	47·1	34·9	35·6	36·4
Diseases of the lymphatic and ductless glands	0·3	0·2	0·2	0·3	0·3	0·2	0·3	0·3	0·2	45·6	16·4	23·5	53·1	28·3	69·5	47·8	21·0	38·8
Diseases of the respiratory system	12·3	14·2	14·1	16·5	14·7	15·5	13·5	14·4	14·5	16·9	18·7	15·0	21·3	17·7	20·8	18·4	18·4	16·7
Diseases of the teeth and gums	3·0	2·4	2·9	4·3	1·5	2·2	3·4	2·1	2·7	10·0	7·6	9·3	9·4	14·7	15·4	9·8	9·1	10·7
Diseases due to disorders of nutrition or metabolism	0·1	0·3	0·2	—	0·2	0·3	0·1	0·3	0·2	30·0	33·1	38·2	—	17·5	76·7	30·0	29·7	54·7
Diseases of the digestive system	28·7	29·3	32·9	57·3	42·6	43·7	36·5	33·1	35·9	21·1	18·4	19·6	16·8	20·6	17·8	19·3	19·2	19·0
Diseases of the generative system	6·6	6·4	6·0	10·2	10·9	11·8	7·6	7·7	7·6	18·1	22·4	19·7	18·7	23·8	24·0	18·3	23·0	21·6
Diseases of the organs of locomotion	12·9	14·5	13·3	14·5	16·4	16·2	13·3	15·1	14·1	18·1	17·2	18·0	20·5	21·3	16·2	18·8	18·5	17·4
Diseases of the areolar tissue and skin	37·8	30·8	29·9	25·5	18·9	19·3	34·4	27·4	26·9	16·5	14·7	15·6	15·8	21·0	16·8	16·3	16·0	15·8
Diseases of the urinary organs	2·5	2·0	2·4	3·1	3·5	3·7	2·7	2·4	2·7	32·3	27·5	24·4	46·7	46·0	49·0	36·8	35·2	33·7
Tumours and cysts	2·5	3·1	2·4	2·3	3·2	3·6	2·4	3·1	2·8	18·4	17·4	15·0	27·1	21·4	17·6	20·6	18·5	16·0
Poisons	1·2	0·3	0·8	2·8	4·1	2·9	1·7	1·4	1·4	6·3	11·3	9·5	12·3	15·2	12·7	9·1	14·7	11·4
All other diseases	5·3	3·0	2·1	10·8	4·1	5·6	6·8	3·4	3·1	10·9	11·6	17·9	22·1	21·5	25·3	15·7	15·1	21·7
Total, all diseases	317·0	323·4	319·3	729·2	558·4	534·3	429·6	390·7	379·1	18·5	16·2	15·9	17·6	19·2	19·6	18·1	17·5	17·4
General injuries	4·6	5·1	6·3	20·2	13·2	9·0	8·9	7·5	7·1	17·1	13·5	19·7	12·3	26·0	21·8	14·1	19·8	20·5
Local injuries	52·3	63·3	60·5	67·1	70·6	62·4	56·3	65·4	61·0	19·7	18·0	20·2	20·4	21·1	21·1	20·0	19·0	20·5
Total, all injuries	56·9	68·4	66·9	87·3	83·9	71·4	65·2	72·9	68·1	19·5	17·7	20·2	18·5	21·9	21·2	19·2	19·1	20·5
Total, all disabilities	373·9	391·8	386·1	816·6	642·3	605·7	494·8	463·6	447·2	18·7	16·5	16·7	17·7	19·6	19·8	18·2	17·7	17·8

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TABLE IV.—DISEASE AND INJURY INCIDENCE, ANALYSED BY AGE GROUPS, 1925.

Age last birthday.	Average strength.			Case incidence per 1,000 of strength.								
				Disease.			Injury.			All disabilities.		
	Home.	Abroad.	Total.	Home.	Abroad.	Total.	Home.	Abroad.	Total.	Home.	Abroad.	Total.
Airmen—												
Under 18 -	2,116	—	2,116	691·9	—	691·9	53·4	—	53·4	745·3	—	745·3
18 and 19 -	3,344	68	3,412	317·0	308·8	316·8	64·3	58·8	64·2	381·2	367·7	318·0
20 and 21 -	3,386	1,012	4,398	292·7	559·3	354·0	57·9	67·2	60·0	350·6	626·5	414·1
22 and 23 -	4,909	3,051	7,960	273·2	535·9	373·9	73·9	78·7	75·8	347·1	614·6	449·6
24 and 25 -	3,092	1,924	5,016	286·9	549·9	387·8	86·4	59·2	76·0	373·2	609·1	463·7
26 and 27 -	1,349	705	2,054	279·5	575·9	381·2	62·3	66·7	63·8	341·7	642·6	445·0
28 and 29 -	994	467	1,461	250·5	531·0	340·2	40·2	74·9	51·3	290·7	606·0	391·5
30 to 34 -	1,323	531	1,854	225·2	531·1	312·8	50·6	54·6	51·8	275·9	585·7	364·6
35 to 39 -	626	252	878	217·3	515·9	302·9	36·7	55·6	42·1	254·0	571·4	345·0
40 and over	326	104	430	248·5	634·6	341·9	27·6	96·2	44·2	276·1	730·8	386·0
Total airmen -	21,465	8,114	29,579	320·7	543·9	381·9	64·2	69·1	65·5	384·9	612·9	447·4
All officers and cadets	2,373	1,076	3,449	306·4	426·8	355·2	91·4	88·3	90·5	397·8	551·1	445·6
Total Force	23,838	9,190	33,028	319·3	534·3	379·1	66·9	71·4	68·1	386·1	605·7	447·2

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Table V.

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TABLE V.—NOSOLOGICAL TABLE OF DISEASES CAUSED BY

Disease.	Home. Average strength, 23,838.				Mediterranean Littoral. Average strength, 3,632.			
	No. of cases.	Case incidence per 1,000 of strength.	Average.		No. of cases.	Case incidence per 1,000 of strength.	Average.	
			No. sick daily.	Duration of case.			No. sick daily.	Duration of case.
Diseases caused by Infection.				Days.				Days.
Dysentery—								
Clinical, primary	—	—	—	—	4	1·1	0·2	22·8
,, recurrent	—	—	—	—	—	—	—	—
Bacillary, primary	—	—	—	—	4	1·1	0·2	19·8
Amœbic, primary	1	0·0	0·1	35·0	6	1·7	0·8	47·7
,, recurrent	2	0·1	0·3	63·5	2	0·6	0·4	65·5
Total—Dysentery	3	0·1	0·4	54·0	16	4·4	1·6	36·7
Enteric Group—								
Typhoid fever	4	0·2	0·8	69·8	—	—	—	—
Paratyphoid fever, A and B	—	—	—	—	—	—	—	—
Enteritis	116	4·9	2·4	7·4	92	25·3	1·6	6·2
Influenza	1,080	45·3	24·6	8·3	42	11·6	0·9	7·9
Malaria—								
Clinical, primary	3	0·1	0·0	5·0	1	0·3	0·0	11·0
,, recurrent	19	0·8	0·4	7·0	7	1·9	0·2	9·1
Benign tertian, primary	2	0·1	0·1	17·0	27	7·4	1·3	17·1
,, ,, recurrent	76	3·3	2·9	14·3	49	13·5	1·2	8·9
Quartan, primary and recurrent	1	0·0	0·1	27·0	1	0·3	0·0	10·0
Malignant tertian, primary	—	—	—	—	—	—	—	—
Malignant tertian, recurrent	—	—	—	—	2	0·5	0·1	14·5
Cachexia	—	—	—	—	—	—	—	—
Total—Malaria	101	4·2	3·5	12·7	87	24·0	2·8	11·7
Pyrexia of unknown origin	24	1·0	0·7	11·1	18	5·0	0·5	9·2
Sandfly fever	—	—	—	—	63	17·3	1·2	7·1
Tuberculosis	22	0·9	4·6	75·6	5	1·4	1·5	111·8
Upper air passage infections	1,750	73·4	35·6	7·4	247	68·0	4·4	6·4
Venereal disease	400	16·8	57·0	52·0	142	39·1	22·4	57·6
Other diseases caused by infection	1,063	44·6	47·2	16·2	169	46·5	6·8	14·7
Total—All diseases caused by infection	4,563	191·4	176·8	14·1	881	242·6	43·6	18·1
All other diseases	3,048	127·9	155·0	18·6	509	140·1	26·9	19·3
Total—All diseases	7,611	319·3	331·9	15·9	1,390	382·7	70·5	18·5
Injuries—								
General injuries	151	6·3	8·2	19·7	32	8·8	2·2	24·7
Local injuries	1,443	60·5	80·0	20·2	191	52·6	10·6	20·2
Total—All injuries	1,594	66·9	88·2	20·2	223	61·4	12·7	20·9
Total—All disabilities	9,205	386·1	420·1	16·7	1,613	444·1	83·3	18·8

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Infection—analysed by Geographical Areas, 1925.

Iraq. Average strength, 3,599.				India. Average strength, 1,959.				Total Force. Average strength, 33,028.			
No. of cases.	Case incidence per 1,000 of strength.	Average.		No. of cases.	Case incidence per 1,000 of strength.	Average.		No. of cases.	Case incidence per 1,000 of strength.	Average.	
		No. sick daily.	Duration of case.			No. sick daily.	Duration of case.			No. sick daily.	Duration of case.
			Days.				Days.				Days.
50	13·9	2·5	17·9	4	2·0	0·3	26·8	58	1·8	3·0	18·9
2	0·6	0·1	12·5	2	1·0	0·3	53·5	4	0·1	0·4	33·0
5	1·4	0·5	39·2	1	0·5	0·0	17·0	10	0·3	0·8	29·2
109	30·3	17·2	57·6	9	4·6	0·6	25·7	125	3·8	18·7	54·6
21	5·8	3·7	64·2	—	—	0·0	—	25	0·8	4·4	64·7
187	52·0	24·0	46·8	16	8·2	1·3	29·6	222	6·7	27·3	44·9
19	5·3	5·7	109·4	8	4·1	2·7	125·0	31	0·9	9·2	108·3
6	1·7	1·5	91·3	4	2·0	1·1	99·5	10	0·3	2·6	94·6
154	42·8	3·7	8·7	37	18·9	1·2	11·6	399	12·1	8·8	8·0
25	6·9	0·6	8·2	6	3·1	0·1	7·7	1,153	34·9	26·2	8·3
27	7·5	0·8	10·2	31	15·8	0·7	8·3	62	1·9	1·5	9·0
14	3·9	0·3	7·4	22	11·2	0·5	8·7	62	1·9	1·3	7·9
134	37·2	4·0	11·0	133	67·9	3·1	8·6	296	8·9	8·7	10·6
178	49·5	5·7	11·7	241	123·0	5·6	8·5	544	16·5	15·3	10·3
—	—	—	—	—	—	—	—	2	0·1	0·1	18·5
9	2·5	1·2	47·1	10	5·1	0·3	12·2	19	0·6	1·5	28·7
1	0·3	0·0	6·0	15	7·7	0·5	12·7	18	0·5	0·6	12·5
—	—	0·5	—	11	5·6	1·1	35·9	11	0·3	1·5	51·3
363	100·9	12·4	12·5	463	236·3	11·9	9·4	1,014	30·7	30·6	11·0
15	4·2	0·9	22·0	2	1·0	0·0	6·0	59	1·8	2·1	13·1
510	141·7	10·4	7·4	121	61·8	2·0	6·0	694	21·0	13·6	7·2
10	2·8	4·8	174·5	1	0·5	0·8	298·0	38	1·2	11·7	112·3
169	47·0	4·1	8·8	82	41·9	1·6	7·1	2,248	68·1	45·6	7·4
78	21·7	9·9	46·1	36	18·4	4·1	41·8	656	19·9	93·4	51·9
173	48·1	10·4	21·9	60	30·6	3·2	19·5	1,465	44·4	67·6	16·9
1,709	474·9	88·2	18·8	836	426·7	30·1	13·1	7,989	241·9	338·8	15·5
646	179·5	55·9	31·6	329	167·9	18·7	20·8	4,532	137·2	256·6	20·7
2,355	654·3	144·1	22·3	1,165	594·7	48·8	15·3	12,521	379·1	595·3	17·4
37	10·3	2·2	21·3	14	7·1	0·6	16·3	234	7·1	13·1	20·5
269	74·7	16·6	22·6	113	57·7	5·9	19·0	2,016	61·0	113·1	20·5
306	85·0	18·8	22·4	127	64·8	6·5	18·7	2,250	68·1	126·2	20·5
2,661	739·4	162·9	22·4	1,292	659·5	55·3	15·6	14,771	447·2	721·6	17·8

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Table VI.—Analysis of Venereal Disease at Home and Abroad during 1925.

Disease.	Home.				Abroad.				Total Force.			
	No. of cases.	Case incidence per 1,000 of strength.	Average		No. of cases.	Case incidence per 1,000 of strength.	Average		No. of cases.	Case incidence per 1,000 of strength.	Average	
			No. sick daily.	Duration of case (days).			No. sick daily.	Duration of case (days).			No. sick daily.	Duration of case (days).
Gonorrhœa—Acute	265	11·1	41·7	57·5	149	16·2	25·2	61·8	414	12·5	66·9	59·0
Relapse	87	3·7	11·1	46·5	46	5·0	6·4	50·7	133	4·0	17·5	47·9
Total	352	14·8	52·8	54·8	195	21·2	31·6	59·1	547	16·6	84·4	56·3
Syphilis—Admissions: Primary	25	1·1	2·6	37·3	15	1·6	1·8	44·8	40	1·2	4·4	40·1
For further treatment	13	0·5	1·1	30·5	8	0·9	0·6	27·2	21	0·6	1·7	29·3
Total	38	1·6	3·7	35·0	23	2·5	2·4	38·7	61	1·8	6·1	36·4
Soft Chancre	10	0·4	0·5	19·9	38	4·1	2·4	22·6	48	1·5	2·9	22·1
Total, Venereal Disease	400	16·8	57·0	52·0	256	27·9	36·4	51·9	656	19·9	93·4	51·9

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TABLE VII.—UPPER AIR PASSAGE INFECTIONS, MONTHLY CASE INCIDENCE PER 1,000 OF STRENGTH, 1925, 1924, AND AVERAGE OF 1921/2/3.

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
United Kingdom.												
1925	11·7	7·8	8·9	6·6	4·7	4·8	3·6	2·9	4·8	5·8	5·7	6·4
1924	*8·3*	*6·8*	*12·6*	*7·6*	*6·8*	*4·9*	*4·6*	*2·6*	*4·0*	*4·0*	*3·9*	*2·8*
1921–2–3	*8·9*	*8·0*	*5·6*	*5·1*	*4·6*	*3·5*	*3·4*	*2·7*	*3·2*	*3·0*	*4·8*	*5·9*
Mediterranean Littoral.												
1925	2·9	8·0	8·0	5·1	3·5	5·3	6·8	8·6	4·7	4·5	5·2	5·9
1924	*12·6*	*10·1*	*5·9*	*4·4*	*2·9*	*9·3*	*12·1*	*8·6*	*6·5*	*6·4*	*6·3*	*2·1*
1921–2–3	*10·1*	*8·1*	*8·9*	*9·0*	*9·2*	*6·6*	*7·6*	*8·3*	*7·2*	*6·1*	*9·6*	*9·3*
Iraq.												
1925	2·5	3·5	3·6	5·4	4·2	3·6	2·5	3·3	5·4	6·0	3·6	3·8
1924	*5·7*	*3·5*	*4·4*	*2·7*	*3·6*	*4·6*	*3·3*	*5·0*	*5·8*	*9·0*	*5·1*	*1·9*
1921–2–3	*5·7*	*7·1*	*6·5*	*5·5*	*6·7*	*3·8*	*4·8*	*5·2*	*7·1*	*8·2*	*7·8*	*4·9*
India.												
1925	3·6	5·1	3·1	2·0	2·5	5·6	4·6	1·5	4·6	4·1	3·6	1·6
1924	*5·8*	*4·1*	*2·1*	*3·1*	*1·6*	*4·6*	*5·7*	*3·7*	*1·6*	*3·2*	*1·6*	*2·6*
1921–2–3	*7·0*	*5·1*	*5·4*	*4·1*	*4·4*	*3·3*	*3·7*	*2·8*	*1·9*	*2·8*	*3·5*	*2·0*
Total Force.												
1925	9·1	7·1	8·0	6·1	4·4	4·7	3·9	3·4	4·8	5·6	5·3	5·8
1924	*8·3*	*6·6*	*10·3*	*6·4*	*5·7*	*5·3*	*5·3*	*3·6*	*4·3*	*4·9*	*4·2*	*2·6*
1921–2–3	*8·7*	*7·8*	*6·1*	*5·6*	*5·3*	*3·9*	*4·0*	*3·6*	*4·0*	*5·0*	*5·6*	*6·1*

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TABLE VIII.—SICKNESS INCIDENCE ANALYSED BY TYPE OF UNIT, 1925.

Type of Unit.	——	Home.					Abroad.					Total.				
		Incidence per 1,000 of strength.				Average duration of case (days).	Incidence per 1,000 of strength.				Average duration of case (days).	Incidence per 1,000 of strength.				Average duration of case (days).
		Cases.	Deaths.	Invalided out of Service.	No. sick daily.		Cases.	Deaths.	Invalided out of Service.	No. sick daily.		Cases.	Deaths.	Invalided out of Service.	No. sick daily.	
Flying units -	Disease	217·7	0·3	7·2	10·6	17·8	485·2	2·7	7·7	27·2	20·5	279·9	0·9	7·3	14·5	18·9
	Injury	65·3	3·6	0·5	4·0	22·5	75·1	9·0	1·6	5·1	25·0	67·6	4·9	0·8	4·3	23·2
	Total	283·0	4·0	7·7	14·7	18·9	560·4	11·7	9·3	32·4	21·1	347·5	5·8	8·1	18·8	19·7
Depôts (store and repair), ground schools, and armoured car companies.	Disease	506·1	0·9	12·9	21·1	15·2	538·1	2·4	5·6	29·2	19·8	516·5	1·4	10·5	23·8	16·8
	Injury	84·7	1·4	1·3	4·4	18·9	66·8	1·9	0·5	3·4	18·5	78·9	1·6	1·0	4·1	18·8
	Total	590·7	2·3	14·2	25·5	15·8	604·9	4·3	6·2	32·6	19·7	595·3	3·0	11·6	27·8	17·1
Headquarters, personnel depôts and miscellaneous small units -	Disease	264·0	1·0	9·0	10·6	14·6	626·0	1·1	5·5	30·5	17·8	376·6	1·0	7·9	16·8	16·2
	Injury	36·9	1·0	—	1·3	13·3	73·3	1·7	0·6	3·7	18·2	48·2	1·2	0·2	1·6	12·0
	Total	300·8	2·0	9·0	11·9	14·5	699·2	2·8	6·1	34·1	17·8	424·8	2·2	8·1	18·3	15·8
Total - -	Disease	319·3	0·6	9·4	14·0	16·0	534·3	2·3	6·4	28·7	19·6	379·1	1·1	8·5	18·1	17·4
	Injury	66·9	2·5	0·7	3·7	20·2	71·4	4·7	1·0	4·1	21·2	68·1	3·1	0·8	3·8	20·5
	Total	386·1	3·1	10·0	17·6	16·7	605·7	7·0	7·4	32·8	19·8	447·2	4·2	9·3	21·8	17·8

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TABLE IX.—INCIDENCE OF CERTAIN DISEASES IN TRADE GROUPS DURING 1925.

Trade Group.	Incidence per 1,000 of strength.								
	Influenza.	Upper air passage infections.	Venereal diseases.	Respiratory diseases.	Digestive diseases.	All other diseases.	All diseases.	All injuries.	All disabilities.
Aircraft Hands - -	26·9	60·4	25·2	14·9	44·5	177·6	349·6	57·0	406·6
Aircraft Apprentices -	149·0	180·3	—	5·6	38·4	195·8	569·2	42·6	611·8
Carpenters and Riggers -	21·6	58·5	21·9	14·1	24·1	176·5	316·6	80·4	397·1
Clerks - - - - -	23·8	55·2	22·3	16·3	34·2	212·8	364·5	45·8	410·2
Drivers - - - - -	15·2	48·9	31·9	13·5	32·6	282·4	424·5	84·9	509·4
Fitters - - - - -	17·3	64·3	16·8	11·6	37·9	209·4	357·4	83·9	441·2
Metal Workers - -	19·4	51·1	22·4	15·0	28·6	211·7	348·2	76·6	424·7
Officers, Cadets and Airman Pilots - - -	40·1	57·2	3·4	17·7	33·9	203·3	355·6	92·0	447·6
Other skilled trades -	23·0	56·3	29·0	19·9	35·2	227·1	390·5	60·5	451·0
TOTAL FORCE - -	34·9	68·1	19·9	14·5	35·9	205·9	379·1	68·1	447·2

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Table X.—Analysis of injuries, 1925.

—	Number of Cases.							
	Airscrews.	Athletics.	Flying.	Motor transport.	Starting motor engines.	Other causes.	Total.	Percentage of total cases.
								%
On duty	33	739	155	60	31	342	1,360	61
Off duty	—	109	—	340	12	402	863	38
Not stated	—	3	—	—	—	13	16	1
Total	33	851	155	400	43	757	2,239	100
Nature of injury :—								
General	4	11	68	89	—	51	223	10
Head and face	2	59	53	123	5	125	367	16
Trunk	3	41	7	12	1	53	117	5
Upper extremity	17	129	12	74	35	194	461	21
Lower extremity	7	611	15	102	2	334	1,071	48
Total	33	851	155	400	43	757	2,239	100
Deaths :—								
On duty	1	2	54	3	—	9	69	68
Off duty	—	3	—	15	—	15	33	32
Total	1	5	54	18	—	24	102	100

Table XI.—Flying casualties, on Duty, 1921–5.

Rank.	*1921.**	*1922.*	*1923.*	*1924.*	1925.
Officers.					
Killed	*24*	*34*	*33*	*46*	41
Injured	*37*	*41*	*40*	*64*	58
Cadets.					
Killed	—	*1*	—	*1*	—
Injured	*1*	*2*	*1*	*1*	1
Airmen.					
Killed	*12*	*15*	*13*	*22*	13
Injured	*12*	*9*	*25*	*35*	42
Total casualties.					
Killed	*36*	*50*	*46*	*69*	54
Injured	*50*	*52*	*66*	*100*	101
Total	*86*	*102*	*112*	*169*	155
Deaths as a percentage of total casualties	*42*	*49*	*41*	*41*	35
Average duration of each case (days) :—					
Deaths included	*37*	*25*	*30*	*21*	29
Deaths excluded	*65*	*48*	*51*	*37*	45

* Excludes casualties in H.M. Airship R. 38.

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TABLE XII.—NOSOLOGICAL TABLE FOR HOME, ABROAD, AND TOTAL FORCE, 1925.

Disease.	Home. Average strength, 23,838.						Abroad. Average strength, 9,190.							Total Force. Average strength, 33,028.					
	No. of cases.	No. of deaths.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages.		No. of cases.	No. of deaths.	No. invalided to United Kingdom.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages.		No. of cases.	No. of deaths.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages.	
					No. sick daily.	Duration of case.						No. sick daily.	Duration of case.					No. sick daily.	Duration of case.
Diseases caused by infection.						Days.							Days.						Days.
Diphtheria	12	—	—	0·5	1·2	35·9	13	—	—	—	1·4	1·5	42·6	25	—	—	0·8	2·7	39·4
*Dysentery	3	—	—	0·1	0·4	54·0	219	—	11	—	23·8	26·9	44·8	222	—	—	6·7	27·3	44·9
*Enteric group	4	—	—	0·2	0·8	69·8	37	5	9	—	4·0	11·0	108·8	41	5	—	1·2	11·8	105·0
*Enteritis (acute) and gastro-enteritis (acute)	116	—	—	4·9	2·4	7·4	283	—	—	—	30·8	6·4	8·3	399	—	—	12·1	8·8	8·0
*Influenza (including influenzal pneumonia)	1,080	—	—	45·3	24·6	8·3	73	—	—	—	7·9	1·6	8·0	1,153	—	—	34·9	26·2	8·3
Leishmaniasis, tropical sore	11	—	—	0·5	1·2	40·6	11	—	1	—	1·2	0·7	22·7	22	—	—	0·7	1·9	31·7
*Malaria	101	—	—	4·2	3·5	12·7	913	1	26	—	99·3	27·1	10·8	1,014	1	—	30·7	30·6	11·0
Measles	77	—	—	3·2	4·1	19·4	—	—	—	—	—	—	—	77	—	—	2·3	4·1	19·4
Mumps	64	—	—	2·7	3·6	20·8	3	—	—	—	0·3	0·3	38·0	67	—	—	2·0	4·0	21·6
Pneumonia	34	1	—	1·4	3·3	35·9	19	1	4	—	2·1	2·0	39·2	53	2	—	1·6	5·4	37·1
*Pyrexia of unknown origin	24	—	—	1·0	0·7	11·1	35	—	—	—	3·8	1·4	14·5	59	—	—	1·8	2·1	13·1
Rheumatism (acute)	20	—	3	0·8	3·2	59·3	14	—	3	—	1·5	2·8	74·3	34	—	3	1·0	6·1	65·5
Rubella	87	—	—	3·6	4·0	16·7	1	—	—	—	0·1	0·0	14·0	88	—	—	2·7	4·0	16·6
*Sandfly fever	—	—	—	—	—	—	694	—	—	—	75·5	13·6	7·2	694	—	—	21·0	13·6	7·2
Scarlet fever	21	—	—	0·9	1·9	33·5	—	—	—	—	—	—	—	21	—	—	0·6	1·9	33·5

* Analysed in further detail in table V.

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TABLE XII.—NOSOLOGICAL TABLE FOR HOME, ABROAD, AND TOTAL FORCE, 1925.—*continued.*

Disease.	Home. Average strength, 23,838.						Abroad. Average strength, 9,190.							Total Force. Average strength, 33,028.					
	No. of cases.	No. of deaths.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages.		No. of cases.	No. of deaths.	No. invalided to United Kingdom.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages.		No. of cases.	No. of deaths.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages.	
					No. sick daily.	Duration of case.						No. sick daily.	Duration of case.					No. sick daily.	Duration of case.
Diseases caused by infection—cont.						Days.							Days.						Days.
*Tuberculosis.																			
Respiratory	14	—	14	0·6	1·9	48·5	13	1	15	16	1·4	5·9	166·6	27	1	30	0·8	7·8	105·4
Other	8	1	9	0·3	2·7	124·4	3	—	3	3	0·3	1·2	145·3	11	1	12	0·3	3·9	129·2
TOTAL—TUBERCULOSIS	22	1	23	0·9	4·6	75·6	16	1	18	19	1·7	7·1	162·6	38	2	42	1·2	11·7	112·3
*Acute upper air passage infections.																			
Laryngitis	29	—	—	1·2	0·9	11·7	2	—	—	—	0·2	0·0	5·5	31	—	—	0·9	1·0	11·3
Pharyngitis and naso-pharyngitis	1,034	—	—	43·4	18·4	6·5	270	—	—	—	29·4	4·6	6·2	1,304	—	—	39·5	23·0	6·4
Rhinitis, acute catarrhal	87	—	—	3·6	1·2	5·0	28	—	—	—	3·0	0·3	4·4	115	—	—	3·5	1·5	4·9
Tonsillitis (including quinsy and Vincent's Angina)	600	—	—	25·2	15·1	9·2	198	—	—	—	21·5	5·1	9·4	798	—	—	24·2	20·2	9·2
TOTAL—UPPER AIR PASSAGE INFECTIONS	1,750	—	—	73·4	35·6	7·4	498	—	—	—	54·2	10·0	7·3	2,248	—	—	68·1	45·6	7·4
Vaccinia	87	—	—	3·6	1·7	7·0	1	—	—	—	0·1	0·0	5·0	88	—	—	2·7	1·7	7·0

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*Venereal disease																		
Gonorrhœa	352	—	1	14·8	52·8	54·8	195	—	5	—	21·2	31·6	59·1	547	—	1	16·6	84·4	56·3
Syphilis	38	—	—	1·6	3·7	35·0	23	—	1	—	2·5	2·4	38·7	61	—	—	1·8	6·1	36·4
Soft chancre	10	—	—	0·4	0·5	19·9	38	—	—	—	4·1	2·4	22·6	48	—	—	1·5	2·9	22·1
*TOTAL—VENEREAL DISEASES	400	—	1	16·8	57·0	52·0	256	—	6	—	27·9	36·4	51·9	656	—	1	19·9	93·4	51·9
Abscess, hand and finger	64	—	—	2·7	2·4	13·7	13	—	—	—	1·4	0·4	12·5	77	—	—	2·3	2·8	13·5
Abscess, other	114	—	—	4·8	4·0	12·9	44	—	1	—	4·8	2·4	20·2	158	—	—	4·8	6·5	14·9
Boils	145	—	1	6·1	3·7	9·2	55	—	—	—	6·0	1·5	9·8	200	—	1	6·1	5·1	9·4
Carbuncles	21	—	—	0·9	0·8	13·9	11	—	—	—	1·2	0·3	8·9	32	—	—	1·0	1·1	12·2
Cellulitis	212	—	—	8·9	6·4	11·1	165	—	—	—	18·0	5·0	11·0	377	—	—	11·4	11·4	11·0
Lymphadenitis and lymphangitis	43	—	—	1·8	2·0	16·8	26	—	—	—	2·8	1·5	21·5	69	—	—	2·1	3·5	18·6
Osteo-myelitis, periostitis and osteitis	15	—	—	0·6	1·7	42·3	2	—	—	—	0·2	0·1	17·5	17	—	—	0·5	1·8	39·4
Pyæmia, septicæmia	2	2	—	0·1	0·2	39·0	2	—	—	—	0·2	0·0	9·0	4	2	—	0·1	0·3	24·0
Ulcer	17	—	—	0·7	0·7	15·6	18	—	—	—	2·0	0·9	18·8	35	—	—	1·1	1·7	17·3
Other diseases caused by infection	17	2	—	0·7	0·9	20·4	4	—	1	—	0·4	0·8	70·5	21	2	—	0·6	1·7	29·9
TOTAL—DISEASES CAUSED BY INFECTION	4,563	6	28	191·4	176·8	14·1	3,426	8	80	19	372·8	162·0	17·3	7,989	14	47	241·9	338·8	15·5
Contacts and carriers	21	—	—	0·9	0·5	9·8	6	—	—	—	0·7	0·2	10·3	27	—	—	0·8	0·7	9·9
Effects of parasites	10	—	—	0·4	0·4	14·2	17	—	4	—	1·8	1·7	36·7	27	—	—	0·8	2·1	28·4

* Analysed in further detail in table V.

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TABLE XII.—NOSOLOGICAL TABLE FOR HOME, ABROAD, AND TOTAL FORCE, 1925—*continued.*

Disease.	Home. Average strength, 23,838.						Abroad. Average strength, 9,190.							Total Force. Average strength, 33,028.					
	No. of cases.	No. of deaths.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages.		No. of cases.	No. of deaths.	No. invalided to United Kingdom.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages.		No. of cases.	No. of deaths.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages.	
					No. sick daily.	Duration of case.						No. sick daily.	Duration of case.					No. sick daily.	Duration of case.
Other diseases classified by systems.						Days.							Days.						Days.
Diseases of nervous system and brain.																			
Neuritis	24	—	—	1·0	1·6	24·4	19	—	5	—	2·1	2·6	50·3	43	—	—	1·3	4·2	35·8
Nerve paralysis	2	—	1	0·1	0·6	112·0	3	—	2	1	0·3	0·5	63·0	5	—	2	0·2	1·1	82·6
Epilepsy (including observation cases)	10	—	7	0·4	0·4	15·0	9	—	4	—	1·0	1·1	43·1	19	—	7	0·6	1·5	28·3
Psychoneurosis	73	—	38	3·1	5·9	29·4	34	—	20	6	3·7	4·9	52·6	107	—	44	3·2	10·8	36·7
Mental diseases (including observation cases)	13	—	11	0·5	3·1	86·4	12	—	4	8	1·3	3·2	99·0	25	—	19	0·8	6·3	92·4
Other diseases of nervous system	21	2	4	0·9	1·7	28·7	15	2	3	1	1·6	1·9	46·8	36	4	5	1·1	3·6	36·3
TOTAL—DISEASES OF NERVOUS SYSTEM AND BRAIN	143	2	61	6·0	13·2	33·8	92	2	38	16	10·0	14·3	56·6	235	4	77	7·1	27·5	42·7
Diseases of the eye.																			
Infections	51	—	5	2·1	2·5	17·6	26	—	4	3	2·8	2·4	33·3	77	—	8	2·3	4·8	22·9
Other diseases of the eye	37	—	14	1·6	1·8	17·7	25	—	13	5	2·7	2·4	34·7	62	—	19	1·9	4·2	24·6
TOTAL — DISEASES OF THE EYE	88	—	19	3·7	4·3	17·7	51	—	17	8	5·5	4·7	34·0	139	—	27	4·2	9·0	23·7

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Diseases of Ear and Nose.																		
Otitis media, acute	22	—	1	0·9	1·5	25·0	10	—	—	—	1·1	0·4	16·5	32	—	1	1·0	2·0	22·3
Otitis media, chronic	41	—	18	1·7	2·8	24·8	32	—	16	5	3·5	5·3	60·3	73	—	23	2·2	8·1	40·4
Other diseases of ear and nose	97	—	8	4·1	6·0	22·4	57	—	4	1	6·2	3·6	23·3	154	—	9	4·7	9·6	22·7
TOTAL — DISEASES OF EAR AND NOSE	160	—	27	6·7	10·3	23·4	99	—	20	6	10·8	9·4	34·6	259	—	33	7·8	19·6	27·7
Diseases of the Circulatory System.																			
Endocarditis, acute	3	—	2	0·1	0·4	48·0	—	—	—	—	—	—	—	3	—	2	0·1	0·4	48·0
Valvular disease of the heart	3	—	3	0·1	0·2	27·3	2	—	3	1	0·2	0·6	100·5	5	—	4	0·2	0·8	56·6
Disease of myocardium	5	—	2	0·2	0·2	16·8	2	—	1	—	0·2	0·5	99·5	7	—	2	0·2	0·8	40·4
Disordered action of the heart	28	—	3	1·2	2·3	29·8	39	—	14	—	4·2	4·4	41·3	67	—	3	2·0	6·7	36·5
Varix	17	—	3	0·7	1·0	22·4	10	—	—	—	1·1	0·6	22·6	27	—	3	0·8	1·7	22·5
Other diseases of the circulatory system	16	2	2	0·7	0·9	21·3	18	1	4	1	2·0	3·0	61·7	34	3	3	1·0	4·0	42·7
TOTAL — DISEASES OF THE CIRCULATORY SYSTEM	72	2	15	3·0	5·1	25·9	71	1	22	2	7·7	9·2	47·1	143	3	17	4·3	14·3	36·4
Diseases of lymphatic system and ductless glands	4	—	2	0·2	0·3	23·5	2	—	1	1	0·2	0·4	69·5	6	—	3	0·2	0·6	38·8
Diseases of the Respiratory System.(a)																			
Bronchitis	205	—	5	8·6	7·5	13·3	65	—	6	—	7·1	3·8	21·6	270	—	5	8·2	11·3	15·3
Tracheitis	52	—	—	2·2	1·2	8·2	25	—	—	—	2·7	0·5	8·0	77	—	—	2·3	1·7	8·1
Asthma	7	—	3	0·3	0·3	16·6	8	—	1	—	0·9	0·3	13·6	15	—	3	0·5	0·6	15·0

(a) Excluding pneumonia and tuberculosis.

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TABLE XII.—NOSOLOGICAL TABLE FOR HOME, ABROAD, AND TOTAL FORCE, 1925—*continued.*

Disease.	Home. Average Strength, 23,838.						Abroad. Average Strength, 9,190.							Total Force. Average Strength, 33,028.					
	No. of cases.	No. of deaths.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages.		No. of cases.	No. of deaths.	No. invalided to United Kingdom.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages.		No. of cases.	No. of deaths.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages.	
					No. sick daily.	Duration of case.						No. sick daily.	Duration of case.					No. sick daily.	Duration of case.
Diseases of the Respiratory System—cont.						Days.							Days.						Days.
Pleurisy	62	—	5	2·6	4·4	25·6	35	—	—	—	3·8	2·3	24·2	97	—	5	2·9	6·7	25·1
Other diseases of the respiratory system	10	—	2	0·4	0·5	17·8	9	—	4	1	1·0	1·1	43·6	19	—	3	0·6	1·6	30·0
TOTAL — DISEASES OF THE RESPIRATORY SYSTEM	336	—	15	14·1	13·8	15·0	142	—	11	1	15·5	8·1	20·8	478	—	16	14·5	21·9	16·7
Disease of teeth and gums	69	—	—	2·9	1·8	9·3	20	—	2	—	2·2	0·8	15·4	89	—	—	2·7	2·6	10·7
Diseases of the Digestive System (excluding tonsillitis).																			
Hypertrophy of tonsils	73	—	—	3·1	4·9	24·3	9	—	—	—	1·0	0·7	27·6	82	—	—	2·5	5·5	24·6
Gastritis, acute	15	—	—	0·6	0·4	10·3	4	—	—	—	0·4	0·1	11·5	19	—	—	0·6	0·6	10·6
Gastritis, chronic	9	—	2	0·4	0·9	36·7	1	—	1	—	0·1	0·1	33·0	10	—	2	0·3	1·0	36·3
Dyspepsia	148	—	—	6·2	3·8	9·4	50	—	—	—	5·4	1·2	8·4	198	—	—	6·0	5·0	9·2
Appendicitis	157	2	2	6·6	12·6	29·2	58	5	1	—	6·3	5·2	33·0	215	7	2	6·5	17·8	30·2

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Hernia	77	—	5	3·2	5·5	26·2	19	—	2	—	2·1	1·5	27·9	96	—	5	2·9	7·0	26·5
Constipation	119	—	—	5·0	2·3	7·1	90	—	—	—	9·8	1·6	6·4	209	—	—	6·3	3·9	6·8
Colic	20	—	—	0·8	0·6	10·0	15	—	—	—	1·6	0·4	10·0	35	—	—	1·1	1·0	10·0
Hæmorrhoids	61	—	—	2·6	3·8	23·0	36	—	—	—	3·9	2·1	21·1	97	—	—	2·9	5·9	22·3
Jaundice	22	—	—	0·9	1·1	18·3	46	—	2	1	5·0	2·7	21·5	68	—	1	2·1	3·8	20·5
Other diseases of digestive system	84	—	3	3·5	6·2	26·8	74	5	2	—	8·1	4·1	20·2	158	5	3	4·8	10·3	23·7
TOTAL — DISEASES OF THE DIGESTIVE SYSTEM	785	2	12	32·9	42·1	19·6	402	10	8	1	43·7	19·6	17·8	1,187	12	13	35·9	61·7	19·0
Diseases due to disorders of nutrition or metabolism	4	—	2	0·2	0·4	38·2	3	—	1	1	0·3	0·6	76·7	7	—	3	0·2	1·0	54·7
Diseases of the Generative System.																			
Phimosis	33	—	—	1·4	1·6	17·9	18	—	—	—	2·0	1·2	24·4	51	—	—	1·5	2·8	20·2
Balanitis	21	—	—	0·9	0·6	11·2	15	—	—	—	1·6	0·4	9·0	36	—	—	1·1	1·0	10·3
Urethritis	43	—	—	1·8	2·6	22·0	50	—	—	—	5·4	4·1	30·0	93	—	—	2·8	6·7	26·3
Varicocele	8	—	—	0·3	0·6	25·4	5	—	—	—	0·5	0·2	12·8	13	—	—	0·4	0·7	20·5
Hydrocele	11	—	—	0·5	0·7	23·5	1	—	—	—	0·1	0·0	9·0	12	—	—	0·4	0·7	22·3
Epididimitis, acute	10	—	—	0·4	0·5	17·3	3	—	—	—	0·3	0·1	8·7	13	—	—	0·4	0·5	15·3
Other diseases of the generative system	16	—	1	0·7	1·1	24·3	16	—	—	—	1·7	1·2	26·6	32	—	1	1·0	2·2	25·4
TOTAL — DISEASES OF THE GENERATIVE SYSTEM	142	—	1	6·0	7·7	19·7	108	—	—	—	11·8	7·1	24·0	250	—	1	7·6	14·8	21·6
Diseases of Organs of Locomotion.																			
Diseases of the bone	12	—	3	0·5	0·9	27·6	8	—	1	—	0·9	0·4	19·5	20	—	3	0·6	1·3	24·4
Diseases of the joints	101	—	8	4·2	7·1	25.6	61	—	5	—	6·6	3·5	21·0	162	—	8	4·9	10·6	23·9
Myalgia and lumbago	97	—	—	4·1	2·6	9·6	55	—	—	—	6·0	1·5	9·7	152	—	—	4·6	4·0	9·6

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TABLE XII.—NOSOLOGICAL TABLE FOR HOME, ABROAD, AND TOTAL FORCE, 1925—*continued.*

Disease.	Home. Average Strength, 23,838.						Abroad. Average Strength, 9,190.							Total Force. Average Strength, 33,028.					
	No. of cases.	No. of deaths.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages.		No. of cases.	No. of deaths.	No. invalided to United Kingdom.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages.		No. of cases.	No. of deaths.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages.	
					No. sick daily.	Duration of case.						No. sick daily.	Duration of case.					No. sick daily.	Duration of case.
Diseases of Organs of Locomotion—cont.						Days.							Days.						Days.
Diseases of muscles, tendons and bursæ	56	—	3	2·3	2·3	14·9	19	—	—	—	2·1	0·7	14·4	75	—	3	2·3	3·0	14·7
Deformities of limbs	52	—	15	2·2	2·9	20·1	6	—	1	—	0·7	0·5	28·3	58	—	15	1·8	3·3	20·9
TOTAL — DISEASES OF ORGANS OF LOCOMOTION	318	—	29	13·3	15·7	18·0	149	—	7	—	16·2	6·6	16·2	467	—	29	14·1	22·3	17·4
Diseases of Areolar Tissue or Skin.																			
Impetigo	245	—	—	10·3	10·2	15·2	58	—	—	—	6·3	2·4	15·0	303	—	—	9·2	12·6	15·2
Scabies	62	—	—	2·6	1·6	9·1	4	—	—	—	0·4	0·1	8·2	66	—	—	2·0	1·6	9·1
Dermatitis	44	—	—	1·8	1·7	14·2	14	—	—	—	1·5	0·8	19·8	58	—	—	1·8	2·5	15·6
Urticaria	11	—	—	0·5	0·2	5·5	10	—	—	—	1·1	0·1	5·3	21	—	—	0·6	0·3	5·4
Eczema	29	—	1	1·2	2·2	27·1	14	—	2	—	1·5	1·1	28·6	43	—	1	1·3	3·2	27·6
Herpes	25	—	—	1·0	0·5	7·9	11	—	—	—	1·2	0·2	7·9	36	—	—	1·1	0·8	7·9
Psoriasis	21	—	—	0·9	2·0	34·4	7	—	—	—	0·8	0·6	30·7	28	—	—	0·8	2·6	33·5
Tineacruris	120	—	—	5·0	5·1	15·5	5	—	—	—	0·5	0·3	21·0	125	—	—	3·8	5·4	15·7
Ingrowing toe-nail	64	—	—	2·7	2·7	15·5	20	—	—	—	2·2	1·0	18·4	84	—	—	2·5	3·7	16·2

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Other diseases of the skin -	92	—	—	3·9	4·3	17·0	34	—	1	—	3·7	1·6	16·9	126	—	—	3·8	5·9	17·0
TOTAL—DISEASES OF THE SKIN - - -	713	—	1	29·9	30·4	15·6	177	—	3	—	19·3	8·2	16·8	890	—	1	26·9	38·6	15·8
Diseases of Urinary Organs.																			
Nephritis - - - -	11	1	3	0·5	1·6	52·3	4	—	4	3	0·4	1·6	147·8	15	1	6	0·5	3·2	77·7
Pyelitis - - - -	2	—	—	0·1	0·2	35·5	8	—	3	—	0·9	1·1	52·0	10	—	—	0·3	1·3	48·7
Inflammation synonym-cystitis - - -	5	—	—	0·2	0·3	22·4	6	—	—	—	0·7	0·3	17·0	11	—	—	0·3	0·6	19·5
Incontinence of urine -	7	—	3	0·3	0·5	25·0	3	—	—	—	0·3	0·4	45·0	10	—	3	0·3	0·8	31·0
Albuminuria - - -	13	—	2	0·5	0·4	10·0	3	—	1	—	0·3	0·5	55·7	16	—	2	0·5	0·8	18·6
Other diseases of urinary organs - - - -	18	—	1	0·8	0·8	16·7	10	—	—	—	1·1	0·7	25·6	28	—	1	0·8	1·5	19·9
TOTAL — DISEASES OF URINARY ORGANS - -	56	1	9	2·4	3·7	24·4	34	—	8	3	3·7	4·6	49·0	90	1	12	2·7	8·3	33·7
Tumours and Cysts.																			
Tumours, non-malignant -	20	—	—	0·8	1·0	18·2	17	—	—	—	1·8	0·7	16·0	37	—	—	1·1	1·7	17·2
Tumours, malignant -	2	2	—	0·1	0·2	36·0	—	—	—	—	—	—	—	2	2	—	0·1	0·2	36·0
Cysts - - - - -	36	—	—	1·5	1·2	12·1	16	—	—	—	1·7	0·8	19·3	52	—	—	1·6	2·0	14·3
TOTAL—TUMOURS AND CYSTS - - - -	58	2	—	2·4	2·4	15·0	33	—	—	—	3·6	1·6	17·6	91	2	—	2·8	4·0	16·0
Poisons.																			
Effects of alcohol - -	—	—	—	—	—	—	3	—	1	—	0·3	0·2	20·0	3	—	—	0·1	0·2	20·0
Other poisons - - -	19	—	—	0·8	0·5	9·5	24	—	—	—	2·6	0·8	11·8	43	—	—	1·3	1·3	10·8
TOTAL—POISONS -	19	—	—	0·8	0·5	9·5	27	—	1	—	2·9	0·9	12·7	46	—	—	1·4	1·4	11·4

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TABLE XII.—NOSOLOGICAL TABLE FOR HOME, ABROAD, AND TOTAL FORCE, 1925—*continued.*

Disease.	Home. Average Strength, 23,838.						Abroad. Average Strength, 9,190.							Total Force. Average Strength, 33,028.					
	No. of cases.	No. of deaths.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages.		No. of cases.	No. of deaths.	No. invalided to United Kingdom.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages.		No. of cases.	No. of deaths.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages.	
					No. sick daily.	Duration of case.						No. sick daily.	Duration of case.					No. sick daily.	Duration of case.
						Days.							Days.						Days.
No appreciable disease -	24	—	—	1·0	0·6	8·6	18	—	3	—	2·0	1·2	24·9	42	—	—	1·3	1·8	15·6
Debility - - - -	26	—	2	1·1	1·9	26·6	33	—	8	1	3·6	2·3	25·6	59	—	3	1·8	4·2	26·0
*TOTAL—ALL DISEASES	7,611	15	223	319·3	331·9	15·9	4,910	21	234	59	534·3	263·5	19·6	12,521	36	282	379·1	595·3	17·4
**General Injuries.*																			
Burns and scalds - -	10	1	1	0·4	0·9	31·4	14	8	—	—	1·5	0·8	22·0	24	9	1	0·7	1·7	25·9
Heatstroke, sunstroke and heat exhaustion - -	1	—	—	0·0	0·0	3·0	10	—	—	—	1·1	0·3	9·2	11	—	—	0·3	0·3	8·6
Suffocation and strangulation - - - -	—	—	—	—	—	—	3	2	—	—	0·3	0·0	2·3	3	2	—	0·1	0·0	2·3
Drowning - - - -	3	2	—	0·1	0·0	1·3	6	6	—	—	0·7	—	—	9	8	—	0·3	0·0	0·4
Minor injuries - - -	77	—	—	3·2	2·0	9·3	22	—	—	—	2·4	0·6	10·0	99	—	—	3·0	2·6	9·5
Multiple fractures - -	15	8	2	0·6	3·8	92·3	10	6	2	3	1·1	2·4	87·9	25	14	5	0·8	6·2	90·5
Gunshot wounds - -	—	—	—	—	—	—	2	—	1	—	0·2	0·3	56·5	2	—	—	0·1	0·3	56·5
Multiple wounds - -	39	29	—	1·6	1·4	12·8	16	10	1	—	1·7	0·5	11·7	55	39	—	1·7	1·9	12·5
Others - - - -	6	—	—	0·2	0·2	9·5	—	—	—	—	—	—	—	6	—	—	0·2	0·2	9·5
*TOTAL—GENERAL INJURIES	151	40	3	6·3	8·2	19·7	83	32	4	3	9·0	4·9	21·8	234	72	6	7·1	13·1	20·5

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Local Injuries.																			
(i) Head and Neck :																			
Contusions and wounds -	116	—	2	4·9	3·3	10·4	41	—	—	—	4·5	1·2	10·7	157	—	2	4·8	4·5	10·5
Gunshot wounds - -	1	1	—	0·0	—	—	—	—	—	—	—	—	—	1	1	—	0·0	—	—
Burns and scalds - -	6	—	—	0·3	0·3	15·5	3	—	1	1	0·3	0·3	38·7	9	—	1	0·3	0·6	23·2
Fracture of skull - -	28	15	2	1·2	1·7	22·6	11	8	1	—	1·2	0·4	12·9	39	23	2	1·2	2·1	19·9
Concussion of brain - -	92	—	—	3·9	3·8	14·9	20	—	3	—	2·2	1·8	32·7	112	—	—	3·4	5·6	18·1
Other fractures - -	12	—	—	0·5	0·7	21·3	7	—	1	—	0·8	0·6	30·0	19	—	—	0·6	1·3	24·5
Other injuries - - -	21	1	—	0·9	1·2	21·0	15	1	1	—	1·6	1·0	24·6	36	2	—	1·1	2·2	22·5
Total—Head and Neck	276	17	4	11·6	11·0	14·5	97	9	7	1	10·6	5·3	19·9	373	26	5	11·3	16·2	15·9
(ii) Trunk :																			
Contusions and wounds -	47	1	—	2·0	1·9	14·7	18	—	—	—	2·0	0·6	11·3	65	1	—	2·0	2·5	13·8
Gunshot wounds - -	—	—	—	—	—	—	—	—	1	—	—	0·6	—	—	—	—	—	0·6	—
Fractures - - - -	8	—	—	0·3	0·9	42·8	6	—	—	—	0·7	0·5	32·2	14	—	—	0·4	1·5	38·2
Other injuries - - -	23	—	—	1·0	1·0	16·7	9	—	—	—	1·0	0·3	10·9	32	—	—	1·0	1·3	15·0
Total—Trunk - -	78	1	—	3·3	3·9	18·2	33	—	1	—	3·6	1·9	21·5	111	1	—	3·4	5·8	19·2
(iii) Upper Extremity :																			
Contusions and wounds -	116	—	1	4·9	4·6	14·4	44	—	1	—	4·8	2·3	19·5	160	—	1	4·8	6·9	15·8
Gunshot wounds - -	2	—	—	0·1	0·2	44·5	2	—	1	—	0·2	0·5	92·0	4	—	—	0·1	0·7	68·2
Burns and scalds - -	14	—	—	0·6	0·6	15·2	7	—	—	—	0·8	0·3	18·1	21	—	—	0·6	0·9	16·2
Fractures - - - -	121	—	—	5·1	10·8	32·5	60	—	1	2	6·5	5·6	33·8	181	—	2	5·5	16·3	33·0
Dislocations - - -	39	—	—	1·6	1·9	18·1	6	—	—	—	0·7	0·3	15·7	45	—	—	1·4	2·2	17·7
Sprains - - - -	24	—	—	1·0	0·9	14·3	12	—	—	—	1·3	0·2	7·3	36	—	—	1·1	1·2	12·0
Other injuries - - -	11	—	—	0·5	0·4	11·6	3	—	—	—	0·3	0·1	13·7	14	—	—	0·4	0·5	12·1
(iv) Total — Upper Extremity - -	327	—	1	13·7	19·4	21·7	134	—	3	2	14·6	9·4	25·5	461	—	3	14·0	28·8	22·8
(v) Total — Hand and Wrist - - -	139	—	1	5·8	6·8	17·9	69	—	2	1	7·5	3·9	20·9	208	—	2	6·3	10·8	18·9
(vi) Total—Rest of limb	188	—	—	7·9	12·6	24·4	65	—	1	1	7·1	5·4	30·5	253	—	1	7·7	18·0	26·0

* Analysed in further detail in table V.

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TABLE XII.—NOSOLOGICAL TABLE FOR HOME, ABROAD, AND TOTAL FORCE, 1925—*continued.*

Disease.	Home. Average Strength, 23,838.						Abroad. Average Strength, 9,190.							Total Force. Average Strength, 33,028.					
	No. of cases.	No. of deaths.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages.		No. of cases.	No. of deaths.	No. invalided to United Kingdom.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages.		No. of cases.	No. of deaths.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages.	
					No. sick daily.	Duration of case.						No. sick daily.	Duration of case.					No. sick daily.	Duration of case.
						Days.							Days.						Days.
Local Injuries—cont.																			
(vii) Lower Extremity :																			
Contusions and wounds	190	—	1	8·0	6·5	12·5	79	—	—	1	8·6	3·0	13·9	269	—	2	8·1	9·5	12·9
Gunshot wounds	1	—	—	0·0	0·1	31·0	2	—	—	—	0·2	0·1	10·0	3	—	—	0·1	0·1	17·0
Burns and scalds	13	—	—	0·5	0·9	25·2	8	—	1	—	0·9	1·0	44·1	21	—	—	0·6	1·9	32·4
Fractures	78	1	7	3·3	20·7	96·8	32	2	5	2	3·5	5·6	63·4	110	3	9	3·3	26·2	87·1
Dislocations	—	—	—	—	—	—	2	—	—	—	0·2	0·1	15·5	2	—	—	0·1	0·1	15·5
Sprains	256	—	—	10·7	8·6	12·2	91	—	—	—	9·9	2·9	11·6	347	—	—	10·5	11·5	12·1
Other injuries	224	—	—	9·4	9·0	14·7	95	—	—	—	10·3	3·9	15·0	319	—	—	9·7	12·9	14·8
(viii) Total — Lower Extremity	762	1	8	32·0	45·8	21·9	309	2	6	3	33·6	16·5	19·5	1,071	3	11	32·4	62·3	21·2
(ix) Total — Foot and ankle	309	—	1	13·0	9·7	11·5	145	—	1	—	15·8	5·3	13·3	454	—	1	13·7	15·0	12·0
(x) Total—Knee	238	—	—	10·0	11·0	16·9	92	—	—	—	10·0	3·9	15·5	330	—	—	10·0	14·9	16·5
(xi) Total—Rest of limb	215	1	7	9·0	25·1	42·6	72	2	5	3	7·8	7·3	37·0	287	3	10	8·7	32·4	41·2
*TOTAL — ALL LOCAL INJURIES	1,443	19	13	60·5	80·0	20·2	573	11	17	6	62·4	33·1	21·1	2,016	30	19	61·0	113·1	20·5
*TOTAL—ALL INJURIES	1,594	59	16	66·9	88·2	20·2	656	43	21	9	71·4	38·0	21·2	2,250	102	25	68·1	126·2	20·5
*TOTAL—ALL DISEASES	7,611	15	223	319·3	331·9	15·9	4,910	21	234	59	534·3	263·5	19·6	12,521	36	282	379·1	595·3	17·4
*TOTAL—ALL DISABILITIES	9,205	74	239	386·1	420·1	16·7	5,566	64	255	68	605·7	301·5	19·8	14,771	138	307	447·2	721·6	17·8

* Analysed in further detail in table V.

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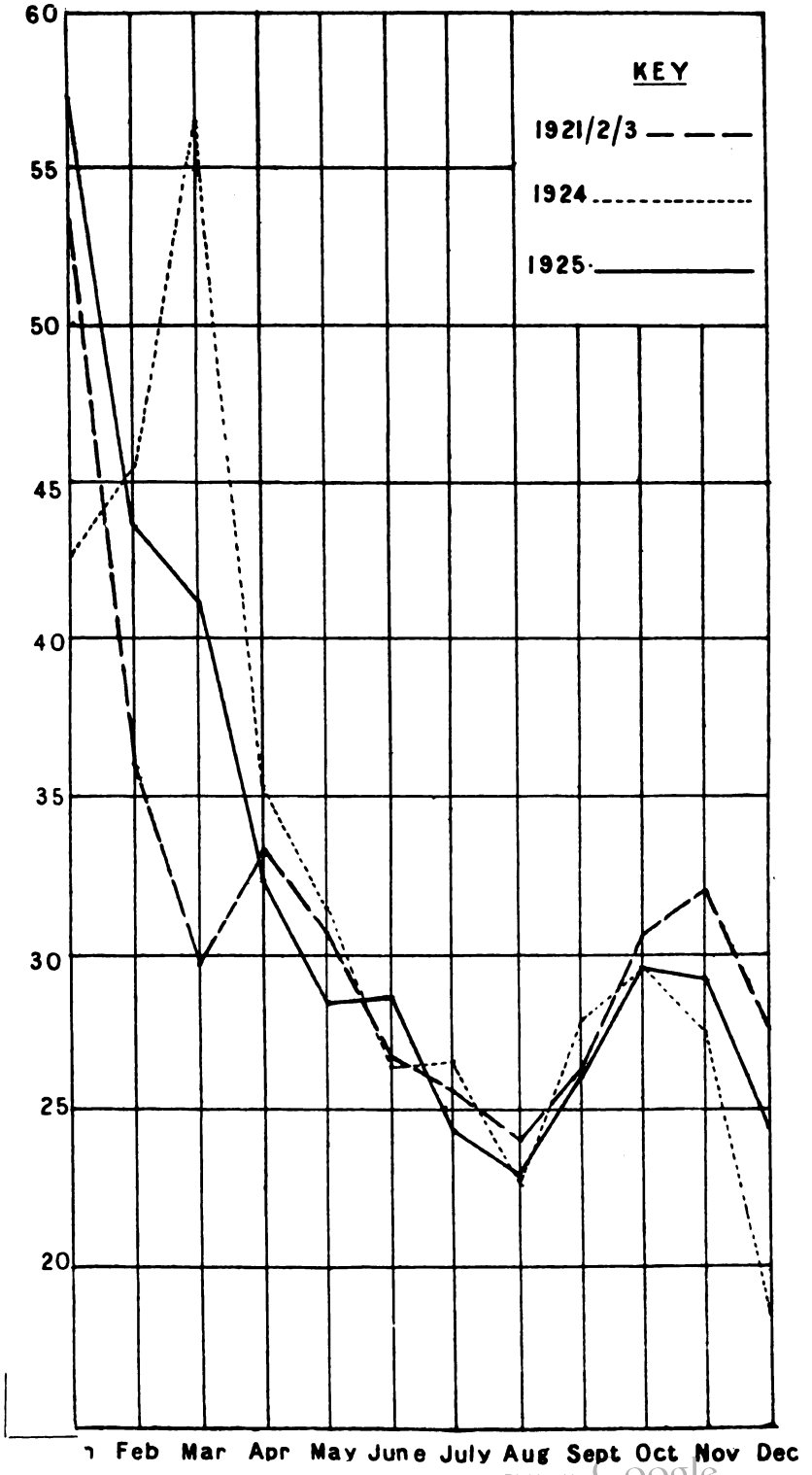
CHART I. SICKNESS AT HOME 1925.
MONTHLY CASE INCIDENCE PER 1,000 OF STRENGTH.



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CHAPTER II.—THE HEALTH OF THE ROYAL AIR FORCE AT HOME DURING 1925.

General.

1. Details of sickness in the United Kingdom during 1925 are given in table I, page viii. The average strength of the force at home during 1925 was 23,838, and the total number of cases of sickness amounted to 18,452, equivalent to a case incidence of 774·1 per 1,000 of strength, compared with 869·1 in 1924. Excluding cases of less than 48 hours' duration, the case incidence becomes 386·1, compared with 391·8 in 1924. The death incidence was 3·1 per 1,000 of strength, compared with 3·7 during 1924. The number of sick daily per 1,000 of strength has remained practically unchanged during 1925 and 1924. Both including and excluding 48-hour cases, a slight increase has occurred in the average duration of each case. A fractional reduction has taken place in the final invaliding incidence when compared with the figures for 1924.

2. An analysis of the monthly case incidence of sickness during the period 1921–1925 shows that the preponderance of sickness occurs during the period January to April in each year. Fluctuations in the monthly incidence from year to year are also more marked during this period. The incidence in the remaining months closely approximate from year to year.

3. The outstanding weather features for the year 1925 were the drought and brilliant weather of June and the cold spell which lasted with little intermission from early November to late December.

4. The incidence of certain diseases amongst airmen at home is analysed by age in table XIII, page 36. As explained in Chapter I, the strength of officers was not sufficient to justify classification by age groups. Sickness figures for all officers at home have, however, been included in the table. The diseases analysed have been chosen as being the chief causes of medical non-effectiveness in the force at home during 1925. As in 1924, the highest disability incidence is found amongst apprentices, the rate, 745·3 per 1,000 of strength, being almost double that for any of the remaining age groups. Taking the individual diseases, fluctuations from group to group occur in the influenza incidence, the highest incidence, 178·6 per 1,000 of strength, occurring among apprentices, the lowest 18·4 amongst airmen over the age of 40 (the strength of this group is, however, small).

The highest incidence of upper air passage infections also occurred amongst apprentices, the lowest in the group aged 35 to 39 years. As would be expected, venereal disease was uncommon amongst the younger age groups. No cases occurred

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amongst apprentices. The incidence progressively increases until the maximum is reached amongst airmen aged 26 and 27; from this point the incidence progressively decreases in the remaining age groups.

Fluctuations occur in the incidence of diseases of the respiratory system, but the general tendency of the figures points to increased liability of attack in the older age groups. Figures for diseases of the digestive system show fluctuations from group to group. The highest incidence was found amongst apprentices, and the lowest in the group aged 24 and 25 No inference can be drawn from the injury figures, the highest rate being found amongst officers and the lowest amongst airmen over the age of 40.

5. Table XIV, page 37, gives an analysis of sickness at the principal stations at home during 1925. Only those stations whose average strength was greater than 500 have been included in the table. The highest sickness incidence, 758·6 per 1,000 of strength, occurred at Cranwell; the next highest, 529·6 at Digby; whilst Halton comes third with an incidence of 428·3. Apprentices undergo training at Cranwell and Halton and consequently the sickness rates would be expected to be higher than at other stations. The incidence of influenza shows wide fluctuations, being highest at Cranwell and lowest at Gosport. The highest incidence of upper air passage infections also occurred at Cranwell, followed by Andover and Digby. As in previous years, the incidence of venereal disease was highest at stations situated near seaside resorts or large towns. The incidence of diseases of the respiratory system shows wide fluctuations, the highest figure being recorded at Kenley, whilst no cases occurred at Shrewsbury. The incidence of diseases of the digestive system calls for no comment.

Diseases calling for Special Mention.

6.—(i) *Influenza.*—A total of 1,080 cases, equivalent to a case incidence of 45·3 per 1,000 of strength, occurred during 1925 as compared with 47·1 during 1924. The average duration of each case was 8·3 days, compared with 9·0 days in 1924. There were no deaths in either year.

(ii) *Pharyngitis and Naso-Pharyngitis.*—A total of 1,034 cases, representing a case incidence of 43·4 per 1,000 of strength, was reported during the year, as compared with 43·8 in 1924.

(iii) *Tonsillitis.*—The case incidence of this disease shows an increase from 22·5 per 1,000 of strength in 1924 to 25·2 during 1925.

(iv) *Tinea Cruris.*—A total of 120 cases was recorded, compared with 88 during 1924. Of the total, 105 cases were reported amongst boys at Cranwell, and a further 8 cases amongst boys at Flowerdown.

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(v) *Rubella.*—A total of 87 cases was recorded at home, compared with 29 during 1924. Of the cases, 53 were recorded at Flowerdown, 10 at Cranwell and 4 at Calshot. The remaining cases were scattered amongst other stations.

(vi) *Impetigo contagiosa.*—Two-hundred-and-forty-five cases, equivalent to a case incidence of 10·3 per 1,000 of strength, occurred during 1925, compared with a case incidence of 11·9 in 1924.

(vii) *Malaria.*—A total of 101 cases, representing a case incidence of 4·2, was recorded, compared with a case incidence of 4·4 in 1924. Two cases of primary infection of the benign tertian type occurred at Eastchurch. Neither of the patients had served abroad. Malaria is not uncommon amongst the civil population in this district and the probability is that the infection was contracted in the district.

(viii) *Typhoid fever.*—Four cases were reported, compared with two in 1924. Two cases occurred at Halton, and one each at Henlow and Uxbridge. The source of infection could not be traced in any of the cases.

7. Chart I, facing page 33, shows the monthly case incidence of sickness per 1,000 of strength at home during 1925, 1924 and the average of the three years 1921, 1922, 1923. The graph for 1925 closely follows those of the other years under comparison, with the exception of the " influenza " peak in 1924.

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TABLE XIII.—INCIDENCE OF CERTAIN DISEASES AT HOME ANALYSED BY AGE, 1925.

Age last birthday.	Average strength.	Case incidence per 1,000 of strength.								
		Influenza.	Upper air passage infections.	Venereal diseases.	Respiratory diseases.	Digestive diseases.	All other diseases.	All diseases.	All injuries.	All disabilities.
Airmen—										
Under 18 -	2,116	178·6	218·3	—	6·6	45·4	242·9	691·9	53·4	745·3
18 and 19 -	3,344	38·0	78·3	3·0	10·8	33·5	153·4	317·0	64·3	381·3
20 and 21 -	3,386	23·6	64·7	15·7	10·9	30·7	147·1	292·7	57·9	350·6
22 and 23 -	4,909	25·7	55·6	29·1	13·9	33·8	115·1	273·2	73·9	347·1
24 and 25 -	3,092	33·6	56·6	31·7	13·3	27·8	123·9	286·9	86·4	373·2
26 and 27 -	1,349	27·4	58·6	34·8	19·3	32·6	106·7	279·5	62·3	341·7
28 and 29 -	994	27·2	55·3	19·1	17·1	30·2	101·6	250·5	40·2	290·7
30 to 34 -	1,323	31·0	41·6	14·4	20·4	30·2	87·7	225·2	50·6	275·9
35 to 39 -	626	27·2	22·4	9·6	19·2	38·3	100·6	217·3	36·7	254·0
40 and over -	326	18·4	36·8	3·1	42·9	39·9	107·4	248·5	27·6	276·1
Total airmen -	21,465	43·9	74·8	18·4	13·6	33·3	136·6	320·7	64·2	384·9
All officers and cadets -	2,373	57·7	60·7	1·7	18·5	29·5	138·2	306·4	91·4	397·8
Total home -	23,838	45·3	73·4	16·8	14·1	32·9	136·8	319·3	66·9	386·1

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TABLE XIV.—ANALYSIS OF SICKNESS AT PRINCIPAL STATIONS AT HOME, 1925.

(Cases of less than 48 hours' duration are not included in this table.)

Station.	Strength.	Case incidence per 1,000 of strength.								
		Influenza.	Upper air passage infections.	Venereal disease.	Respiratory diseases.	Digestive diseases.	All other diseases.	All diseases.	All injuries.	Total all disabilities.
Andover - -	503	15·9	121·3	13·9	8·0	21·9	83·5	264·4	93·4	357·9
Calshot - -	559	71·6	34·0	16·1	14·3	30·4	164·6	330·9	96·6	427·5
Cranwell - -	2,183	210·7	197·0	12·8	8·7	33·0	219·9	682·1	76·5	758·6
Digby - -	540	38·9	120·4	16·7	25·9	31·5	177·8	411·1	118·5	529·6
Eastchurch - -	736	10·9	39·4	8·2	14·9	20·4	72·0	165·8	70·7	236·4
Flowerdown -	1,152	14·8	79·0	7·8	9·5	30·4	176·2	317·7	32·1	349·8
Gosport - -	595	10·1	26·9	35·3	16·8	28·6	84·0	201·7	25·2	226·9
Halton - -	3,168	46·7	80·8	7·6	12·9	43·4	172·2	364·3	64·1	428·3
Henlow - -	1,733	21·9	73·3	26·5	14·4	37·5	119·5	293·1	86·0	379·1
Kenley - -	546	36·6	84·2	7·3	31·1	25·6	133·7	318·7	82·4	401·1
Manston - -	1,203	29·1	63·2	20·8	11·6	25·8	113·9	264·3	64·8	329·2
Netheravon -	689	17·4	45·0	16·0	18·9	39·2	88·6	225·0	65·3	290·3
Sealand - -	570	21·1	33·3	15·8	17·5	28·1	73·7	189·5	63·2	252·6
Shrewsbury -	587	27·3	15·3	25·5	—	34·1	93·7	196·0	42·6	238·5
Uxbridge - -	2,177	24·3	52·4	14·7	14·2	38·6	163·6	307·8	33·1	340·9
All other stations -	6,897	27·0	52·4	21·0	15·7	29·9	111·1	257·0	73·2	330·3
TOTAL - -	23,838	45·3	73·4	16·8	14·1	32·9	136·8	319·3	66·9	386·1

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CHAPTER III.—THE HEALTH OF THE ROYAL AIR FORCE ABROAD DURING 1925.

General.

1. Sickness figures for the force abroad as a whole, and for each of the various geographical areas abroad are shown in table I, page viii.

2. The average strength of the force abroad during 1925 was 9,190, and the total number of cases of sickness amounted to 11,311, representing a case incidence of 1230·8 per 1,000 of strength, compared with 1393·9 in 1924. If 48-hour cases are excluded, the case incidence becomes 605·7 as compared with 642·3 in 1924. The death incidence shows an increase from 6·5 in 1924 to 7·0 during the year under review. A reduction has been effected in the number sick daily; including 48-hour cases the figure is 35·2 per 1,000 of strength, compared with 37·2 in 1924; excluding these minor cases 32·8 as compared with 34·3. A slight increase has taken place in the average duration of each case during 1925.

3. Chart II, facing page 38, shows the monthly case incidence of sickness per 1,000 of strength for the total force abroad during 1925, 1924 and the average of 1921, 1922, 1923. The chief point of interest is the gradual disappearance since 1920 of the very high peak during the summer months. In previous reports of this series the high peak has been shown to be due to a very great extent to sandfly fever. In 1924 the incidence of this fever was reduced to what is thought may be considered normal for Iraq. The incidence in 1925 closely approximated to that of 1924, and the lessening of the summer peak in 1925 was chiefly due to the diminished incidence of malaria.

4. An analysis of the incidence of dysentery, malaria and sandfly fever at each of the larger stations abroad is given in table XV, page 44. The table shows for each station the total number of admissions due to disease, as distinct from injury, and the percentage of the total caused by each of the three specified diseases.

(i) As in previous years, the highest disease incidence abroad has occurred at Basrah, the admission rate for all diseases being 922·4 per 1,000 of strength, compared with 1081·2 during 1924. Dysentery, malaria and sandfly fever together accounted for 60·1 per cent. of the admissions for all diseases. The chief factor, as in previous years, was malaria, this disease being responsible for 52·4 per cent. of the total admissions.

(ii) At Mosul, the total disease incidence amounted to 818·4 per 1,000 of strength as compared with 600·0 in 1924. The three specified diseases were responsible for 52·7 per cent. of the

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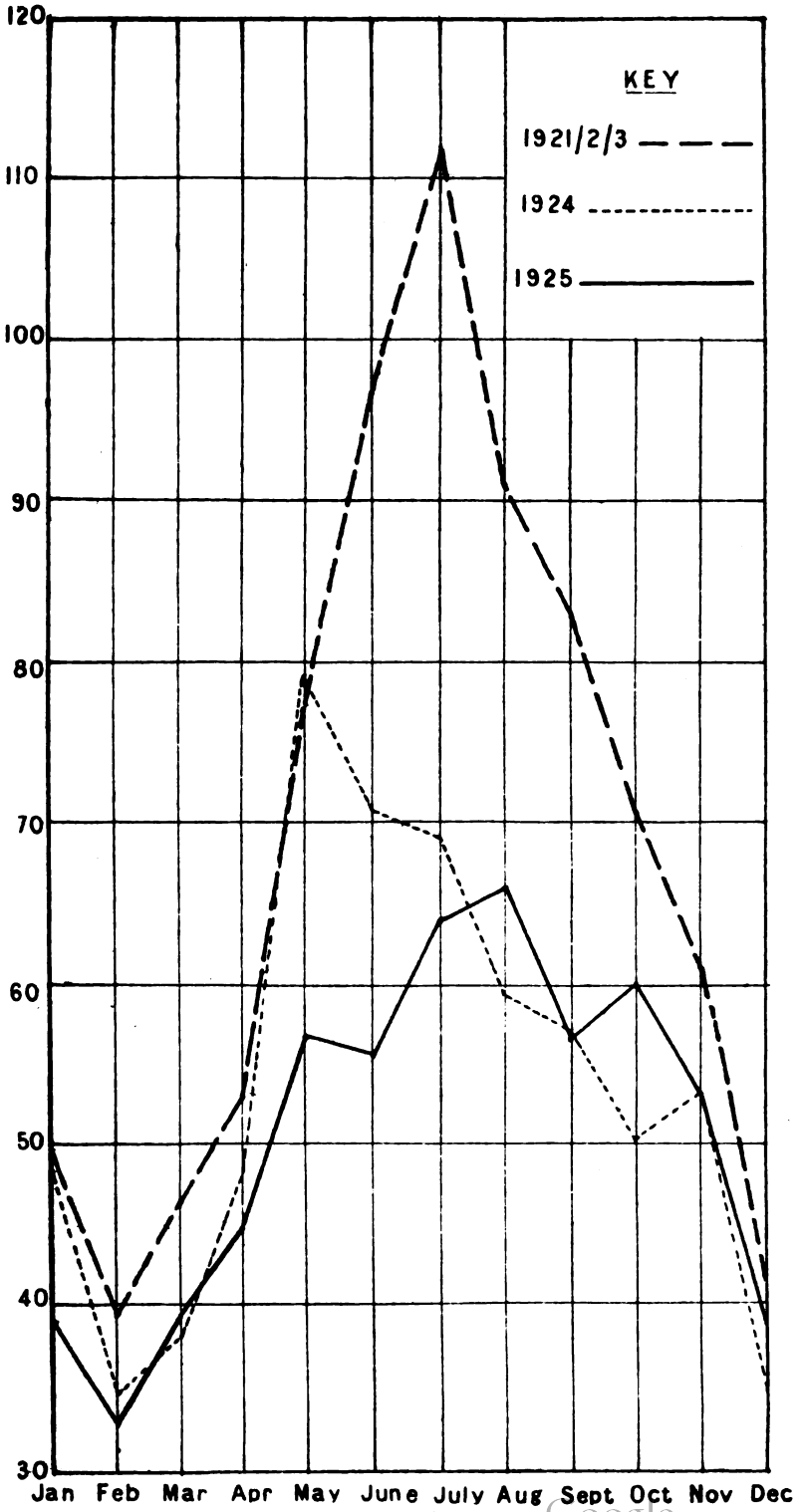
CHART II. SICKNESS ABROAD 1925.
MONTHLY CASE INCIDENCE PER 1000 OF STRENGTH.



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former being 7·1 and the latter 8·2, compared with 2·6 and 4·2, respectively, during 1924.

A marked increase in both primary and total case incidence has occurred in Iraq, the primary incidence amounting to 45·6, compared with 26·5 in 1924, and the total case incidence to 52·0, compared with 32·2 in 1924.

Table XVIII, page 47, gives the case incidence of dysentery at each of the principal stations abroad during 1925. The table shows, under separate headings, the number of cases of clinical, bacillary and protozoal dysentery recorded at each station. The term clinical dysentery is given to those cases which present dysenteric symptoms but in which pathological examinations fail to reveal the cause of infection. A distinction is also made in the table between primary and all other cases.

A total of 16 cases, of which 14 were primary, was recorded in the Mediterranean Littoral; of the total, five were notified at Aboukir and four amongst various small units and drafts en route to and from the United Kingdom. The prevailing type of disease, as in 1924, was protozoal in origin.

In India, a total of 16 cases was recorded, of which 14 were stated to be primary. Four cases were notified from Lower Barian and a further four at Risalpur. The prevailing type, as in previous years, was protozoal in origin. Only one case of the bacillary type was recorded.

A total of 187 cases, of which 164 were stated to be primary, occurred in Iraq. Of the total, 117 cases, of which 100 were primary, were recorded at Hinaidi. A further 30 cases occurred at Mosul. As in previous years, the prevailing type was protozoal in origin, but the almost negligible number of recurrences amongst the clinical dysenteries is suggestive that most of these were of the bacillary type. The increase in the incidence of dysentery may be in part attributed to the thorough bacteriological examination of the stools of all possible carriers, which procedure has been a feature of the bacteriological work in Iraq for the past few years. Many unsuspected carriers have been discovered and all such cases have been treated and recorded as cases of dysentery. The increase in dysentery was not confined to service personnel, as a similar increase was also reported amongst the civil population.

7. *Malaria.*—The monthly case incidence of malaria in the various geographical areas abroad is analysed in table XVII, page 46. Primary cases are shown separately from all others. The case incidence for the force abroad as a whole has fallen from 118·5 per 1,000 of strength in 1924 to 99·3 in 1925. At the same time the incidence of primary cases has fallen from 42·9 to 40·5. A reduction in both primary and total case incidence has been effected in the Mediterranean Littoral, the former being 7·7 and the latter 23·9, compared with 10·9, and 30·7, respectively, during 1924.

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Figures for Iraq show that a reduction in both primary and total case incidence has also occurred in this command, the primary case incidence being 51·9 as compared with 53·3 in 1924, and the total case incidence 100·9, compared with a corresponding figure of 144·8 in 1924.

In India, both primary and total case incidence show an increase over the 1924 figures. The primary rate being 88·8 as compared with 81·6, and the total incidence 236·4, compared with 228·6 in the previous year.

In both the Mediterranean Littoral and Iraq the highest monthly case incidence was recorded during the month of November, and in India during August.

Table XVIII, page 47, shows the incidence of malaria at each of the larger stations abroad during 1925, primary cases being shown separately from all other cases of malaria.

The greatest number of cases in the Mediterranean Littoral was recorded at Aboukir; of the 23 cases notified, four were stated to be be primary.

A total of 363 cases was reported from the Iraq Command. Of these, 243, of which 104 were primary cases, occurred in the Basrah area, whilst a further 44 cases occurred in the Hinaidi district. The conditions at Basrah are referred to in Chapter IV, page 55.

In India a total of 463 cases, of which 174 were primary, was recorded.

Detailed figures of the incidence of the various types of malaria in each of the geographical areas abroad will be found in table V, page 14.

8. *Sandfly fever.*—The monthly case incidence of sandfly fever in each of the geographical areas abroad is given in table XVII, page 46. The case incidence for the force abroad as a whole shows a reduction from 79·4 per 1,000 of strength in 1924 to 75·5 during the year under review. This is the lowest figure so far recorded in the Royal Air Force.

A reduction has been effected in the Mediterranean Littoral, the case incidence being 17·3 per 1,000 of strength in 1925, compared with 36·4 in 1924. In India the case incidence has increased from 43·9 in 1924 to 61·8 during 1925. A slight increase is recorded by the figures for the Iraq Command, the case incidence being 141·7 as compared with 139·1 in 1924. Sandfly fever in this command accounted for 21 per cent. of the total admissions due to disease. The highest incidence was recorded during the month of July, whilst the maximum was reached during June in 1924.

The monthly case incidence figures support the impression formed in previous years that a late outbreak of the disease tends to coincide with a low case incidence. The actual number of cases of sandfly fever recorded at each of the larger stations abroad is shown in table XVIII, page 47.

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In the Mediterranean Littoral, 18 cases occurred amongst R.A.F. personnel of the aircraft carriers and at Malta, whilst a further 11 cases occurred at Abu Sueir in Egypt.

In Iraq, 255 cases were reported from the Hinaidi area and a further 113 at Mosul.

The greatest number of cases in India occurred at Peshawar, whilst 43 were recorded at Karachi.

9. *Enteric group:* (i) *Typhoid fever.*—A total of 27 cases, resulting in 4 deaths, was recorded in the force abroad during 1925, as compared with 15 cases, resulting in 4 deaths, during 1924.

Of the 27 cases, 19 occurred in Iraq and the remaining 8 in India.

The 19 cases recorded in Iraq were distributed as follows:—Hinaidi 8, Mosul 6, and single cases at Shaibah, Ashar, Baghdad, Kirkuk and Margil. No common sources of infection could be traced at any of the stations. Fifteen of the cases gave positive bacteriological findings. Of the 19 cases, 8 were stated to have been fully inoculated; 3 had been fully inoculated, but the protection so conferred is regarded as having partially lapsed owing to the period of time since inoculation. Details of inoculation were not recorded in the remaining 8 cases.

The eight cases in India were distributed as follows:—Risalpur 5, Peshawar 3. Four of the cases notified from Risalpur occurred amongst officers and the source of infection was traced to a carrier employed in the officers' mess kitchen. The units concerned were on active service in the Mahsud country in occupation in a temporary camp. Of the eight cases, three had been fully inoculated and one had been inoculated previously. No record of inoculation was recorded in the four remaining cases.

(ii) *Paratyphoid "A."*—A total of six cases, with no resultant deaths, was recorded, as compared with one case during 1924.

Three cases occurred in Iraq and three in India. All were sporadic and no connection could be traced between any of the cases. All six gave positive bacteriological findings. Five of the six were stated to have been fully inoculated; the remaining case had also been inoculated, but the interval of time which had elapsed since inoculation precluded any possibility of protection.

(iii) *Paratyphoid "B."*—Four sporadic cases, resulting in one death, were recorded, as compared with four cases and no deaths during 1924.

Three of the four occurred in Iraq, the remaining case in India.

One case had been fully inoculated with prophylactic vaccine, and one had been inoculated, but the interval of time which had elapsed since inoculation precluded any possibility of protection. Details of inoculation were not recorded in the two remaining cases.

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10. *Schistosomiasis.*—Four cases occurred during 1925, compared with 50 cases in 1924. Two cases were notified in India; both patients had previously received treatment for the disease in Iraq.

One case occurred in Egypt and the remaining case in Iraq.

11. *Heatstroke and heat exhaustion.*—One case of heatstroke was recorded in Egypt. There were no deaths. In addition there were nine cases of heat exhaustion, compared with 36 cases in 1924. Six cases occurred in Iraq, two in Palestine and the remaining case in Egypt.

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TABLE XV.—ANALYSIS OF DISEASE AT PRINCIPAL STATIONS ABROAD IN 1925.

Station.	Average strength.	Number of cases.						Percentage of total number of cases of disease at station.					Case incidence per 1,000 of strength.		
		Dysentery.	Malaria.	Sandfly fever.	Total dysentery, malaria, and sandfly fever.	All other diseases.	Total all diseases.	Dysentery.	Malaria.	Sandfly fever.	Total dysentery, malaria, and sandfly fever.	All other cases.	Dysentery, malaria, and sandfly fever.	Other diseases.	Total all diseases.
Abbassia, Cairo and Heliopolis	584	3	9	1	13	197	210	1·4	4·3	0·5	6·2	93·8	22·1	335·6	357·8
Aboukir - -	706	5	23	9	37	303	340	1·5	6·8	2·6	10·9	89·1	52·4	429·2	481·6
Abu Sueir - -	436	1	11	11	23	129	152	0·6	7·2	7·2	15·1	84·9	52·8	295·9	348·7
Baghdad - -	365	13	12	46	71	100	171	7·6	7·0	26·9	41·5	58·5	194·5	273·9	468·4
Basrah, Margil and Makina -	503	9	243	27	279	185	464	1·9	52·4	5·8	60·1	39·9	554·6	367·8	922·4
Hinaidi, Kirkuk and Kingerban	2,171	134	65	317	516	797	1,313	10·2	5·0	24·1	39·3	60·7	237·7	367·1	604·8
Mosul - -	413	30	35	113	178	160	338	8·9	10·4	33·4	52·7	47·3	431·0	387·4	818·4
Karachi - -	684	1	149	43	193	226	419	0·2	35·6	10·3	46·1	53·9	282·2	330·4	612·6
Calafrana and Aircraft carriers	692	—	18	18	36	207	243	—	7·4	7·4	14·8	85·2	52·0	299·1	351·1

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TABLE XVI.—INCIDENCE OF CERTAIN DISEASES ABROAD ANALYSED BY AGE, 1925.

Age.	Average strength.	Case incidence per 1,000 of strength.										
		Dysentery.	Malaria.	Sand-fly fever.	Upper air passage infections.	Venereal diseases.	Respiratory diseases.	Digestive diseases.	All other diseases.	All diseases.	All injuries.	All disabilities.
Airmen—												
18 and 19 -	68	14·7	14·7	14·7	58·8	14·7	—	14·7	176·5	308·8	58·8	367·7
20 and 21 -	1,012	38·5	72·1	105·7	50·4	24·7	13·8	47·4	206·5	559·3	67·2	626·5
22 and 23 -	3,051	20·3	115·7	82·3	54·7	36·5	12·5	38·0	176·3	535·9	78·7	614·6
24 and 25 -	1,924	15·6	110·7	74·3	60·8	32·2	16·1	49·4	190·7	549·9	59·2	609·1
26 and 27 -	705	24·1	126·2	73·8	55·3	31·2	14·2	39·7	211·3	575·9	66·7	642·6
28 and 29 -	467	30·0	81·4	60·0	45·0	40·7	23·6	55·7	194·9	531·0	74·9	606·0
30 to 34 - -	531	26·4	126·2	60·3	52·7	15·1	11·3	35·8	203·4	531·1	54·6	585·7
35 to 39 - -	252	31·7	83·3	55·6	55·6	11·9	31·7	59·5	186·5	515·9	55·6	571·4
40 and over -	104	38·5	86·5	67·3	28·8	38·5	48·1	67·3	259·6	634·6	96·2	730·8
Total airmen -	8,114	23·3	106·5	78·3	54·7	31·3	15·2	43·8	190·8	543·9	69·1	612·9
All officers -	1,076	27·9	45·5	54·8	50·2	1·9	17·7	43·7	221·2	462·8	88·3	551·1
Total abroad -	9,190	23·8	99·3	75·5	54·2	27·9	15·5	43·7	194·3	534·3	71·4	605·7

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TABLE XVII.—DYSENTERY, MALARIA AND SANDFLY FEVER ABROAD.—MONTHLY CASE INCIDENCE, 1925.

Month.	Dysentery.						Malaria.						Sandfly fever.		
	Mediterranean Littoral.		India.		Iraq.		Mediterranean Littoral.		India.		Iraq.		Mediterranean Littoral.	India.	Iraq.
	Primary cases.	All cases.	Primary cases.	All cases.	Primary cases.	All cases.	Primary cases.	All cases.	Primary cases.	All cases.	Primary cases.	All cases.			
January	1	1	1	1	3	3	—	7	2	25	5	25	—	—	—
February	—	—	1	2	1	3	—	3	—	8	1	14	—	—	—
March	1	1	—	—	9	9	—	5	2	26	7	22	—	—	—
April	2	2	3	3	9	12	1	8	3	19	9	26	3	13	8
May	1	1	1	1	23	25	—	3	5	28	19	39	1	14	76
June	—	—	3	3	14	18	—	6	2	17	22	42	3	12	103
July	2	2	1	1	6	7	2	9	11	38	18	41	15	16	114
August	—	1	—	—	21	22	2	8	62	99	10	22	24	37	98
September	1	2	2	3	14	15	7	8	46	90	8	20	10	15	66
October	3	3	2	2	21	23	9	13	23	68	24	29	5	8	39
November	1	1	—	—	30	34	7	15	11	31	43	71	1	5	6
December	2	2	—	—	13	16	—	2	7	14	4	12	1	1	—
Total	14	16	14	16	164	187	28	87	174	463	170	363	63	121	510
Case incidence per 1,000 of strength—															
1925	3·9	4·4	7·1	8·2	45·6	52·0	7·7	23·9	88·8	236·4	51·9	100·9	17·3	61·8	141·7
1924	*5·5*	*7·7*	*2·6*	*4·2*	*26·5*	*32·2*	*10·9*	*30·7*	*81·6*	*228·6*	*53·3*	*144·8*	*36·4*	*43·9*	*139·1*
1921–22–23	*12·8*	*15·7*	*16·1*	*29·3*	*32·0*	*40·8*	*10·5*	*23·9*	*117·1*	*245·3*	*57·2*	*109·2*	*84·2*	*79·9*	*377·3*

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Table XVIII.—Incidence of Dysentery, Malaria and Sandfly Fever at Stations Abroad, 1925.

Station.	Average Strength.	No. of Cases.										
		Dysentery.								Malaria.		Sandfly fever.
		Clinical.		Bacillary.		Protozoal.		All types.				
		Primary.	All.	Primary.	All.	Primary.	All.	Primary.	All.	Primary.	All.	
Mediterranean Littoral.												
Abbassia, Cairo and Heliopolis	584	—	—	2	2	1	1	3	3	4	9	1
Aboukir	706	1	1	1	1	2	3	4	5	4	23	9
Abu Sueir	434	—	—	—	—	1	1	1	1	9	11	11
Amman	128	—	—	—	—	—	—	—	—	—	1	8
Bir Salem	71	1	1	1	1	—	—	2	2	1	1	1
Helouan	147	—	—	—	—	—	—	—	—	2	3	—
Ludd and Sarafand	217	—	—	—	—	—	1	—	1	1	4	6
Malta and Aircraft Carriers	692	—	—	—	—	—	—	—	—	1	18	18
Moascar	158	—	—	—	—	—	—	—	—	4	6	5
Ramleh	140	—	—	—	—	—	—	—	—	—	3	1
Various small stations and drafts en route	355	2	2	—	—	2	2	4	4	2	8	3
Total	3,632	4	4	4	4	6	8	14	16	28	87	63
Iraq.												
Baghdad	365	3	4	—	—	8	9	11	13	4	12	46
Basrah, Margil and Makina	503	3	3	1	1	4	5	8	9	104	243	27
Hinaidi, Kirkuk and Kingerban	2,171	39	40	4	4	74	90	117	134	34	65	317
Mosul	413	5	5	—	—	22	25	27	30	24	35	113
Shaibah	147	—	—	—	—	1	1	1	1	4	8	7
Total	3,599	50	52	5	5	109	130	164	187	170	363	510
India.												
Ambala	176	1	1	—	—	2	2	3	3	21	59	2
Karachi	684	1	1	—	—	—	—	1	1	68	149	43
Kohat	174	—	—	—	—	2	2	2	2	28	42	10
Lahore	144	—	—	—	—	1	1	1	1	17	81	10
Lower Barian	131	2	3	1	1	—	—	3	4	5	12	1
Peshawar	212	—	—	—	—	—	—	—	—	18	41	48
Quetta	175	—	—	—	—	1	1	1	1	3	18	3
Risalpur	196	—	1	—	—	3	3	3	4	12	52	4
Various small stations	67	—	—	—	—	—	—	—	—	2	9	—
Total	1,959	4	6	1	1	9	9	14	16	174	463	121

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CHAPTER IV.—MISCELLANEOUS.

The Central Medical Board.

1. The constitution and functions of the Central Medical Board have been described in previous reports of this series, and no change in either has occurred during 1925.

2. The total number of examinations conducted by the Board during 1925 amounted to 2,472 as compared with 1,439 in 1924. Of the total of 2,462 examinations, 1,211 were for the purpose of assessing physical fitness for air duties in respect of candidates for commissions in the general duties branch and also amongst serving officers. A further 471 were examinations of serving officers to determine their physical fitness for the duties of the various branches to which they belonged. Examinations of candidates for the Reserve of Officers accounted for a further 210. One hundred and thirteen examinations were conducted in assessing the fitness of candidates for cadetships. One hundred and fifty-five examinations were for the purpose of ascertaining the physical fitness of airmen for training as airman pilots, 82 other examinations were re-ordered boards on reserve officers, cadets and airman pilots.

Candidates for commissions in the chaplains, medical, stores, legal and dental branches numbered 111. The remaining 119 cases were miscellaneous examinations, and included candidates for Princess Mary's Nursing Service, preliminary examinations of cadets, &c.

3. Of the 1,211 candidates and serving officers examined in respect of physical fitness for the general duties branch, 28 were found temporarily unfit and failed to present themselves for re-examination; of the remaining 1,183, 828 were accepted and 355 rejected.

4. Table XIX, page 60, shows the actual number of candidates accepted and rejected under each of the different groups, as well as the percentage of the total accepted in each group. Compared with the corresponding percentages in 1924, a decrease in the percentage accepted has occurred, with the exception of the Fleet Air Arm and candidates for permanent commissions which show a slight increase.

5. The average results of physical efficiency tests and measurements in each class of candidates who were finally accepted for flying duties are recorded in table XX, page 60.

Serving officers examined for permanent commissions are not included, nor are those candidates who were rejected on grounds other than medical.

6. Table XXI shows the causes of rejection of 497 candidates who were not accepted. As in previous years, defective vision

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alone or in combination with other defects was the chief cause of rejection. One hundred and ninety out of the total of 497, or 38 per cent., were rejected for this cause alone, as compared with 50·8 per cent. during 1924. Of the 60 serving officers examined in respect of physical fitness for permanent commissions, only one was rejected.

Medical Officers' School of Instruction and Medical Research Laboratory.

7. During the year 1925, 26 medical officers attended for courses of instruction; of these, 22 had recently been appointed to short service commissions, two came from the Royal Naval Medical Service, one from the Irish Free State Army Medical Corps, and one from the Czecho-Slovakia Army Medical Service.

8. In the Medical Research Laboratory, experiments were continued on the value of the flying aptitude apparatus, described in the last report, as well as on the importance of vision and neuro-muscular co-ordination in working apparatus fitted to the machine. As the result of these experiments :—

(i) the flying aptitude apparatus was improved and provided with an especially designed automatic recorder, so that it is now possible to make a fully recorded examination of (*a*) the arm movements, (*b*) the leg movements and (*c*) the combined arm and leg movements employed in flying in approximately 10–15 minutes;

(ii) The means of perception employed in certain apparatus used in service machines was investigated and a report made suggesting modifications;

(iii) Special means were devised for testing periodically the efficiency of such apparatus in service;

(iv) Special means were devised for testing the aptitude of subjects in the use of such apparatus and also for practice for the acquisition of skill in use.

9. Experiments have also been in progress to provide a means of mitigating the effect of noise in large aeroplanes.

Physical Efficiency of Serving Officers of the Royal Air Force.

10. Every officer and airman pilot, with the exception of those who were patients in hospital, was medically examined at the end of the year, and the results were recorded on special cards : 3,469 cards were received.

11. Table XXII, page 61, shows the physical assessments in respect of flying duties of 2,272 officers of the general duties branch at the end of 1925. The corresponding figures for the three previous years are also given in the table for comparison. The numbers in the table do not include officers sick in hospital, officers of the general duties branch above the rank of Wing

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Commander, over 40 years of age or retained to complete service for pension, officers of the medical, dental, chaplain, stores and accounting branches. All officers temporarily unfit for air duties at the date of examination are included in the unfit and it should be realised that many classified in the table as unfit for full flying duties were fit for air duties excluding piloting. Ninety-one per cent. of the officers of the general duties branch were fit for full flying duties.

12. Such physical efficiency tests carried out at this annual medical examination as were capable of numerical expression are analysed, in Table XXIII, page 62, in respect of the 2,066 officers and 211 airman pilots who were found fit for full flying duties. The figures for airman pilots closely approximate to those for officers and for both officers and airman pilots in 1925 to those in 1924. All the figures are above the accepted standards based on war conditions.

13. The results of further examinations of the 2,272 officers and 216 airman pilots referred to above, including both fit and unfit, are recorded in Table XXIV, page 64. The officers are classified as fit or unfit, but as there were only five unfit among the airman pilots no subdivision of the total 216 is made. The unfit show throughout a lower standard than the fit; and the standard of the airman pilot closely approximates to that of the officer.

14. Table XXV, page 65, analyses the causes of unfitness of the 206 officers of the general duties branch shown as unfit in table XXII. Defective vision, as in previous years, is the chief cause of unfitness, and in fact the whole table follows the corresponding table for 1924 exactly as regards the order of the causes of unfitness and very closely as regards the proportion of the numbers shown under each cause of unfitness to the total number of unfit. The causes for 1925 have been grouped as for 1924, with the exception of the addition in 1925 of a further group " Defective physical efficiency and ears or teeth."

15. Two-hundred-and-sixty-two cards were received for officers of the general duties branch who are not called upon to fly, *i.e.*, over the age of 40, above the rank of Wing Commander, or retained to complete service for pension. Of these 262, 86 were fit for full flying duties, 30 for limited flying duties—a limitation as regards duration of flight, height, and aerobatics, 35 as combatant passengers and 80 as passengers only. Six were found permanently unfit for any form of flying and three temporarily unfit for any form of duty. The remainder were fit for duty at home only, 4 for full flying and ground duties, 3 for limited flying, 8 passengers only and 7 ground duties only.

16. Cards were also received for 719 officers of the medical, dental, chaplain, stores and accountant branches. Of these, 700 were considered fit for general service and 19, including those temporarily unfit, for home service only.

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Medical Examination of Recruits.

17. Recruits aged 18 years or over for the Royal Air Force undergo their medical examination at R.A.F. Recruiting Depôts, R.A.F. Stations, or at certain towns where civilian medical practitioners are engaged on a capitation basis. Aircraft apprentices (14–18 years) are all examined at Halton.

18. Recruiting depôts were open in London during the whole year and at Newcastle-on-Tyne and Birmingham from April 6th until the end of the year. Recruits who on account of the distance of the nearest recruiting depôt have been medically examined by a civilian medical practitioner are, if considered physically fit, instructed to proceed to the nearest recruiting depôt for a more detailed examination. Sixty-nine civilian medical practitioners were so employed during 1925 and examined 3,023 recruits.

19. The total number of recruits (18 and over) examined during the year was 6,299, of whom 1,320 were rejected at the preliminary examination by civilian medical practitioners; and of the remaining 4,979, 2,885 were passed fit at recruiting depôts, and 2,094 rejected. Of this total of 2,885 who were found medically fit, 2,258 were enlisted, the remainder being rejected on grounds other than medical. Table XXVI, page 65, analyses the causes of rejection of the 2,094 rejected recruits. Again, as in previous years, " loss or decay of many teeth " constitutes the main cause. Compared with the analysis of rejected recruits in 1924, " diseases of the heart " occupies second place as a cause of rejection, but " poor physique " comes into third place from fourth in 1924. In addition, 855 out of 1,141 aircraft apprentices (aged 14–18 years) were enlisted during 1925—a total intake of 3,113. In order of frequency, defective vision, poor physique, defects of the lower extremities, and diseases of the middle ear constituted the main causes of rejection in this class of recruit.

20. Table XXVII, page 66, shows the average physical measurements of accepted recruits by age groups in comparison with the average measurements of the same groups in 1920–1924.

Hygiene and Sanitation.

Home.

21. The improvement referred to in previous reports has been maintained throughout the home commands.

22. *Lectures and Courses.*—(i) A total of 12 officers and 50 airmen obtained pass marks at the three-week courses held at the Army School of Hygiene; in addition, 5 airmen of the medical branch passed in the " long course " of four months' duration which is held once a year. Cadets at the Cadet College, Cranwell, received the normal course of lectures on hygiene and sanitation, and examination showed that a satisfactory standard of knowledge was attained. Courses of lectures in these subjects were delivered at Flying Training Schools, and these courses are

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being systematized so as to ensure the inclusion of all details of consequence.

(ii) The newly-instituted promotion examinations for officers of the Royal Air Force will include an examination in Hygiene and Sanitation, and the first of these papers set, with the examiner's comments thereon, will be found in Air Publication 1215. It is anticipated that these examinations, upon which the promotion of certain officers will in future depend, will be the means of raising the level of the general knowledge of hygiene.

23. *Accommodation.*—There are still many buildings which are by no means ideal for their purpose, but these are being improved, and in some cases replaced, as rapidly as the present financial situation will allow. Where the cost of replacement with satisfactory buildings is too great to allow the work to be undertaken at present, every care is being taken to ensure that the existing buildings are kept up to a reasonable standard.

24. *Conservancy.*—The sewage effluents of all stations have received careful attention throughout the year, and no complaints were recorded. The disposal of refuse has been carried out satisfactorily; incinerators were maintained in good repair.

25. *Water Supplies.*—(i) All station water-supplies, which were analysed at least once during the year, have, with few exceptions, shown a high standard of purity.

(ii) The improvements outlined for those stations to which reference was made in last year's report have now been completed. Spittlegate now receives its water-supply from the Granthan municipal mains, which is quite satisfactory. At Manston all the defective mains, both in the camp area and the town, have been replaced. At Upavon (the Valley Bore) arrangements have now been made for the installation of a gas chlorinating plant. This will ensure a safe water; further, as this source is used to supplement the Hill Bore Supply and therefore mixed in the tanks, the taste of chlorine, if any, will be very slight and of rare occurrence.

26. *Food and Cooking.*—Strict supervision has been maintained over the supply and preparation of foodstuffs. Only one outbreak of gastro-intestinal disorders, apparently of food origin, was reported :—

> At Halton, in February, 45 aircraft apprentices, most of whom were admitted to hospital, showed mild symptoms of food poisoning, and investigation proved that all had partaken of tinned salmon. It has been decided not to issue tinned salmon to aircraft apprentices in future as this was the third occasion in three years of an outbreak of food poisoning due to tinned salmon.

27. *General.*—(i) The health of the force at home has been of a high standard. The incidence of communicable disease was quite low, with no serious outbreak of epidemic disease. During the winter months a considerable number of cases of

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rubella, principally amongst the boys and younger airmen, was reported. The incidence of two cases of indigenous malaria in England called for the institution of special preventive measures which should prove successful, although malaria is relatively common in the neighbourhood of Eastchurch, where the two cases occurred.

(ii) With the advent of the influenza epidemic season, prophylactic measures were instituted, and a notable reduction in the number of cases, compared with previous years, was reported.

(iii) Tinea Cruris, which for the past two years has been prevalent amongst the boys at Cranwell, is less prevalent.

(iv) The progress and development of new entrants under training at Halton is satisfactory. They are measured and weighed twice yearly and show a general and progressive increase in size and weight.

(v) It is rather significant that none of the aircraft apprentices of the September, 1925, entries has developed Hallux Rigidus, and whether this is due to coincidence or to the fact that they were issued with the lighter naval-pattern boot is a matter which is being investigated further.

(vi) A swimming-bath has been installed at Halton and was opened for general use in December. Attention is given to the water, which is analysed monthly and so far has been satisfactory.

Middle East.

28. Meteorological features of note in the Nile Delta during the year were recorded as follows:—Atmospheric pressure was high and above the normal during January and December; below the normal in February, March, June, October and November; while for the remaining months of the year figures about the average were recorded. The mean maximum air-temperature conformed to the average of previous years, except in May and July, when it was slightly greater. The mean minimum was below the normal for January and February, and above it during July, August, and October. Humidity remained fairly constant, except in March, August, September and October, when it was just above the average.

29. *Accommodation.*—Generally, accommodation remains as in the previous report. The new barrack-blocks at Aden are in course of construction and when completed will greatly improve conditions there. Plans for a three-storeyed barrack-block at Heliopolis have been approved and building will shortly be begun. The existing buildings are unsatisfactory for a permanent station. Three new barrack-blocks have been erected at Aboukir and are satisfactory. Workshops were adequate and the use of more fans undoubtedly improves the conditions under which men work.

30. *Water Supplies.*—The standard of the supply at Aboukir, with few exceptions, has been maintained, but constant supervision is necessary as the source of supply is still grossly polluted.

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The Helouan supply (municipal) is still shown by analysis to be bad, and chlorination has had to be carried out during the year.

31. *Conservancy.*—The provision of a water-borne drainage system at Aboukir was necessary owing to parts of the camp area being water-logged, and is in course of installation. Conservancy in general has been carried out satisfactorily.

32. *General.*—The malaria menace is always present, and continuous preventive measures were centred on mosquito-breeding places, but little diminution was noticed in the number of mosquitoes. It is anticipated that the anti-malaria law of the Egyptian Government will do much to assist in the abatement of this nuisance. The incidence of sandfly fever has again been very low, and communicable diseases were not prevalent.

Palestine.

33. The distribution of personnel has not materially altered since the last report. More airmen have been stationed at Amman, a station of increasing importance.

34. *Accommodation.*—No material change is reported. The types of buildings occupied are described in previous reports.

35. *Water Supplies.*—(i) The water-supplies of all stations have been adequate, with three exceptions, viz., Ludd, Amman, and Jerusalem. Fortunately the situation at no time became serious. The quality of most samples was good, but there was always a rather high bacterial count. Chlorination was used where necessary, and it is worthy of note that water supplies, though bacteriologically impure, have caused no water-borne disease.

(ii) At Ramleh, the bore originally installed broke down and, although since reworked, the water was found unfit for use owing to the high percentage of mineral sulphates. A temporary supply was used, causing considerable anxiety on account of the undesirable source. Chlorination, therefore, has been continuous, but arrangements are being made to supply this station from the city municipal well, a satisfactory water.

(iii) Analyses of samples of water have been carried out regularly once a week.

36. *Conservancy.*—(i) A water-borne system similar to that completed at Ramleh has been installed at Amman which has been satisfactory except for a period when, owing to water-shortage, reversion had to be made to the old pail system.

(ii) A central destructor station has been erected in the Sarafand area and has enabled the incinerators, which were a cause of offence through being too near the quarters, to be abolished.

(iii) The contract system, where employed, has generally been very satisfactory, and it is anticipated that in the near future it will be adopted for all stations.

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37. *Food and Cooking.*—A very fair standard has been maintained during the year. An excellent selection of vegetables, according to season, was available. All brands of milk issued have been subjected to analysis with favourable results. The question of a fresh milk supply was considered, but unfortunately the cost was prohibitive. Mineral waters have been analysed and, with one exception, were satisfactory. Arrangements were made for the examination on engagement, and from time to time subsequently, of all native servants employed in preparation of of food, for evidence of infection.

38. *General.*—(i) Anti-malarial measures were carried out in conjunction with the civil health authorities with considerable success. The Anti-Malarial Commission of the League of Nations visited the command during the spring, and attended a demonstration of the local problems. Investigations proved that "solar oil" possesses mixing properties and larvicidal action equivalent to those of paraffin.

(ii) The incidence of communicable disease generally shows a decrease, illustrating further the improvement in sanitary conditions which has been maintained during the period under review.

Malta.

39.—(i) Prophylactic measures against sandfly fever, as recommended by the R.A.F. Sandfly Commission of 1922 and as carried out last year, were again adopted, and the low incidence of this disease in Malta is of interest as a confirmation of the efficacy of the measures adopted, and affords additional proof that the steady improvement of 1924 was not due to special conditions.

(ii) Arrangements have been made for the erection of a permanent disinfector: this will greatly facilitate the periodical disinfection of bedding, &c., which has not been possible in the past owing to lack of facilities.

(iii) Generally, the health of all personnel was very good.

Iraq.

40. The meteorological statistics for 1925 were :—

	Basrah Area.	Baghdad Area.	Mosul Area.
Maximum temperature -	118	117·7	115
Minimum temperature -	21	18·8	12
Rainfall - - -	83·1 mms.	109·9 mms.	250·4 mms.

In comparison with 1924, the rainfall was low.

41. *Accommodation.*—The buildings are of a permanent nature liberally supplied with fans, and give protection, as far as possible, from the extremes of temperature. No material change has taken place during the period under review.

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42. *Water Supplies.*—The highly polluted state of the sources of supply demands the utmost care to ensure the sterility of drinking water before consumption. Frequent analyses were performed and the standard of purity was satisfactory.

43. *Conservancy.*—The standard was maintained and general improvements to existing systems reported.

44. *Food and Cooking.*—No complaints were reported, and the quality, considering climatic conditions, was satisfactory.

45. *General.*—(i) The general health of all personnel was satisfactory. The chief communicable diseases recorded were dysentery, enteric group, and malaria, detailed figures relating to which will be found in Chapter III.

(ii) Dysentery has shown an increased case-incidence compared with 1924; this increase is not unreasonable as there was a large increase in cases amongst the civil population. With improvement in hygiene, a decrease is naturally expected, but when flies are more prevalent, as was the case this year, an increase is always probable. Rigid precautions were taken to prevent contamination of food by dust, and all personnel employed in handling food were regularly examined for possible carriers.

(iii) The increase of enteric fever was common throughout the country. Each case was individually investigated and no common source of infection could be found. It has been definitely decided that re-inoculation with T.A.B.C. vaccine should take place every 12 months.

(iv) The incidence of malaria shows marked improvement throughout the command; a decrease for the country in general being recorded. Anti-malarial measures were carried out and proved satisfactory.

INDIA.

46. The air force and army medical authorities maintained a close liaison with regard to the inspection and maintenance of stations. The incidence of communicable disease has not shown any great variation from that of previous years. Sandfly fever, dysentery and malaria continue to be the most important factors in the disease-incidence.

Vaccination and Inoculation.

47. *Vaccination.*—During the year, drafts totalling 1,777 left the United Kingdom, all being certified as protected by recent vaccination. Primary and secondary vaccinations performed in the United Kingdom amounted to 5,828, equivalent to a ratio of 244·4 per 1,000 of strength, compared with 275·6 in 1924, 378·6 in 1923, 477·9 in 1922 and 369·4 in 1921: abroad, 2,200, of which 53 were successfully vaccinated for the first time. Revaccinations abroad continue to show a high percentage of failures, 836 being recorded out of a total of 2,138 (39·1 per cent.). This percentage is much lower than in previous

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years. The vaccination-state of the total force, however, continues to be satisfactory; table XXVIII, page 67, shows in detail the results of vaccination in each geographical area as well as for the whole force.

48. *Inoculation.*—At home, 558 persons received one dose of T.A.B.C. vaccine and 2,433 two doses. Abroad, 5,795 inoculations were performed, of which 4,113 were single doses, being distributed as follows:—Mediterranean, 9 one-dose, 217 two-dose; Middle East, 1,755 one-dose, 380 two-dose; Iraq, 1,362 one-dose, 465 two-dose; and India, 987 one-dose, 620 two-dose. A high inoculation state was thus maintained amongst all personnel serving abroad.

Pathological Work performed in Royal Air Force Laboratories.

49. During 1925, clinical laboratories were situated in the R.A.F. hospitals at Halton and Cranwell in the United Kingdom; and at Hinaidi, Basrah, Mosul and Ludd abroad. These laboratories performed the routine pathological work of their respective hospitals, and a synopsis of the work done in each is shown in table XXIX, page 68.

50. In January, 1925, the R.A.F. Central Laboratory was moved from Finchley to Halton as a separate unit, known as the R.A.F. Pathological Laboratory. The functions of this laboratory are:—

(i) to act as a centre for the clinical laboratories, to guide and help them technically and to carry out any tests or examinations that they cannot carry out themselves;

(ii) to perform the routine pathological work of all R.A.F. stations at home, except in the case of the hospitals mentioned above;

(iii) to carry out pathological investigations on such serving officers, candidates for commissions, members of the Princess Mary's Royal Air Force Nursing Service, airmen and civilian aviators as the Central Medical Board may refer to it;

(iv) to analyse, at least once a year, samples from the water supply and sewage effluent of all R.A.F. stations in the United Kingdom; and to perform any food analyses that might be required;

(v) to prepare, store and issue stock vaccines (T.A.B.C., cholera, influenza, acne, staphylececcus, &c.) for use in the Royal Air Force at home and abroad;

(vi) to train R.A.F. officers and airmen in pathological duties;

(vii) to be ready to undertake the investigation of epidemics of disease that might occur in the service, and to carry out researches in pathology, bacteriology, tropical medicine and hygiene when opportunity offers or when called upon to do so.

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51. The total number of routine specimens examined in these pathological laboratories during the year amounted to 27,898; that is 1,627 more than during the previous year.

Princess Mary's Royal Air Force Nursing Service.

52. During 1926, 36 cases of sickness were admitted to hospital, compared with 50 in 1924. The respective average strength figures were 120 and 119. Of the 36 cases, 20 were recorded at home and 16 abroad, representing a total number of days sickness of 737, or an average duration per case of 20·5 days, compared with 15·6 in 1924. The increase in the average duration was largely due to two cases at home, which received 212 days treatment for rheumatoid arthritis and sciatica, respectively. The principal causes of non-effectiveness were malaria and sandfly fever abroad and recurrent malaria and influenza at home.

53. Eight operations were carried out during the year, one for appendicectomy, two for excision of varicose veins and five for incision of abscesses. Five cases admitted to hospital were the results of accidents, four of which were of a minor nature—sprains and contusions caused by falls—and one concussion and fractured occipital bone (simple), the result of a riding accident abroad. One notifiable disease (rubella) was recorded.

54. During the year, fourteen applicants were finally accepted and eleven members resigned: there were no deaths. One case of invaliding for sciatica was recorded.

Transfers of Casualties by Air.

55. During the year 1925, 176 cases were transferred by air in Iraq, compared with 81 in 1924. The total number of actual journeys and miles flown by machines on this duty was 81 and 14,492, respectively. At home, in India, Egypt and Palestine a few cases which called for transfer without delay were moved by similar means, but it is only in Iraq that this method of conveyance has become a routine procedure.

56. The employment of aircraft for this purpose is of great value in cases where the seriousness of the injury or disease demands evacuation with the least possible delay or where the nature of the country is such that no other form of transport is practicable. Several types of machine are employed :—

(i) Ambulances fitted with accommodation for sitting or stretcher cases and attendants.

(ii) Large machines which can carry sitting or lying cases inside the fuselage.

(iii) Small machines which in emergency can carry sitting cases or, by the use of the Neil Robertson stretcher fastened along the top of the fuselage, even lying cases.

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57. Patients whose immediate transfer is not imperative are collected and evacuated by aircraft carrying out a duty trip, but when time is of importance, the ambulance or other aircraft are specially requisitioned. Of the 81 trips referred to in para. 55, 51 were special and 30 duty trips. One-hundred-and-twenty-six of the 176 cases recorded during the year were carried by the ambulance.

Royal Air Force Reserve of Officers.

58. During 1925, 210 candidates for the Reserve of Officers, as compared with a total of 320 during 1924, were examined by the Central Medical Board.

59. The standard of health maintained during the annual training was good only, eight cases of sickness and injury (excluding flying accidents) and twelve flying accidents being reported. Three of these accidents proved fatal, four necessitated hospital treatment of from 3–16 days' duration, and in five the occupant was uninjured and resumed flying the same day.

60. The senior medical officer carried out 155 routine examinations of flying personnel, and his results showed that a standard closely comparable to that of the regular R.A.F. officer was maintained for the reserve. The standard of fitness estimated according to that required of the R.A.F. during the European War of 1914–18 showed that of the 155 officers examined, 100 were above the average, 26 conformed to the average, and 29 were below it. The visual efficiency of the same pilots, estimated by convergence and ocular muscle balance, gave the following figures—very good, 53; good, 72; fair, 22; poor, 8.

Dental Treatment.

61. A summary of the dental treatment carried out during 1925 is shown in table XXX, page 69.

62. The figures in respect of treatment afforded by R.A.F. dental surgeons closely approximate to those of 1924 and continue to show an increase in the proportion of conservative work to extractions. The number of cases which received treatment from Navy, Army, or civilian dental surgeons shows a marked decrease compared with the figures for 1924.

Other Cases treated in R.A.F. Hospitals and Sick Quarters.

63. Information as to the number of cases other than R.A.F. which were treated in R.A.F. hospitals and sick quarters during 1925 is given in table XXXI, page 70.

Surgical Operations.

64. Particulars of the number of surgical operations carried out on R.A.F. personnel during 1925 are given in table XXXII, page 71.

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Table XIX.—Results of 1,058 Examinations by the Central Medical Board as to Fitness for Flying, 1925.

Class of Candidate.	Number accepted.	Number rejected.	Total.	Percentage accepted.
Cadets	66	47	113	59
Short service commissions	312	372	684	46
Airman pilots	85	70	155	55
Permanent commissions (serving officers only)	59	1	60	98
Fleet Air Arm	39	7	46	85
Total	561	497	1,058	53

Table XX.—Candidates for Flying Duties.

Average Physical Efficiency Tests and Measurements recorded by the Central Medical Board during 1925.

——	Unit of Measurement.	Class of Candidate.				
		Cadets.	Short Service Commission Officers.	Airman Pilots.	Fleet Air Arm Officers.	All Classes.
Numbers accepted	—	66	259	85	39	449
Average age	years	18·5	22·1	22·3	25·7	21·9
Average results of tests.						
Standing height	cms.	175·9	174·8	171·4	177·1	174·6
Weight	kgms.	63·6	63·9	61·8	66·9	63·7
Chest	cms.	87·5	87·6	87·6	90·1	87·8
Vital capacity	cubic cms.	4,961	5,121	4,740	5,245	5,036
Breath-holding	seconds	80·1	76·5	79·6	79·9	77·9
Expiratory force	mm.Hg.	139·9	140·9	139·0	156·2	141·7
Fatigue test	seconds	64·3	63·5	64·5	66·7	64·1
Systolic pressure	mm.Hg.	131·2	129·4	128·9	130·8	129·7
Diastolic pressure	mm.Hg.	78·8	80·0	79·2	82·8	79·9
Pulse rate :—						
Sitting	per min.	70·9	72·5	70·2	69·3	71·6
Standing	per min.	80·5	82·0	78·8	77·4	80·7
After exercise	per min.	106·2	107·0	105·2	97·3	105·7
Time taken to return to normal	seconds	30·1	27·8	26·2	26·3	27·7

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Table XXI.—Causes for Rejection by the Central Medical Board during 1925.

Reason for Rejection.	Class of Candidate.					
	Cadets.	Short Service Commissions.	Fleet Air Arm.	Airman Pilots.	Permanent Commissions (Serving Officers).	Total.
(1) Vision	16	138	2	33	1	190
(2) Ears, nose and throat	1	12	2	7	0	22
(3) Medical and surgical	7	43	2	6	0	58
(4) Defective physical efficiency	10	92	0	12	0	114
(5) Combinations of (1), (2), (3), with (4)	13	87	1	12	0	113
Total	47	372	7	70	1	497

Table XXII.—Physical Assessment in respect of Air Duties of 2,272 Officers of the General Duties Branch.

——	Year.	Fit, full flying.	Unfit, full flying.	Total.	Percentage fit, full flying.
At home	1925	1,401	154	1,555	90
	1924	*1,384*	*168*	*1,552*	*89*
	1923	*1,330*	*196*	*1,526*	*87*
	1922	*1,181*	*173*	*1,354*	*87*
Abroad	1925	665	52	717	93
	1924	*672*	*60*	*732*	*92*
	1923	*616*	*85*	*701*	*88*
	1922	*638*	*104*	*742*	*86*
Total	1925	2,066	206	2,272	91
	1924	*2,056*	*228*	*2,284*	*90*
	1923	*1,946*	*281*	*2,227*	*87*
	1922	*1,819*	*277*	*2,096*	*87*

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TABLE XXIII.—AVERAGE RESULTS OF TESTS OF 2,066 SERVING OFFICERS OF THE GENERAL DUTIES BRANCH AND 211 AIRMAN PILOTS FIT FOR FLYING DUTIES, 1925.

—	Age group.	No. examined.	Age.	Weight.	Time breath held.	Expiratory force.	Fatigue test.	Pulse rate per minute.			Time taken to return to normal.	Systolic pressure.	Pulse pressure.
								Sitting.	Standing.	After exercise.			
OFFICERS.	Yrs.		Yrs.	Kgs.	Secs.	MM. Hg.	Secs.				Secs.	MM. Hg.	MM. Hg.
At home	Under 25	398	21·6	67·8	77·3	145·3	61·5	73·5	79·7	102·0	22·3	124·6	45·7
	25–30	617	27·3	68·5	74·9	153·0	60·3	72·5	78·8	101·7	23·0	124·2	44·4
	31 and over	386	34·0	70·6	70·8	151·4	56·8	73·2	79·9	102·6	22·6	124·2	43·9
Total at home		1,401	27·5	68·9	74·5	150·4	59·7	73·0	79·3	102·0	22·7	124·3	44·6
Abroad	Under 25	148	22·8	68·4	77·9	153·9	61·0	72·6	81·4	103·6	21·2	123·4	46·4
	25–30	341	27·3	68·7	74·5	152·7	60·6	73·6	80·5	101·4	21·4	124·7	44·3
	31 and over	176	33·9	69·7	69·2	153·6	57·2	73·8	80·7	102·2	20·4	126·1	43·7
Total abroad		665	28·0	68·9	73·9	153·2	59·8	73·4	80·8	102·1	21·1	124·8	44·6
Total force	Under 25	546	21·9	67·9	77·5	147·6	61·4	73·2	80·2	102·5	22·0	124·3	45·9
	25–30	958	27·3	68·5	74·8	152·9	60·4	72·9	79·4	101·6	22·5	124·4	44·5
	31 and over	562	34·0	70·4	70·3	151·9	56·9	73·4	80·1	102·5	21·9	124·8	43·8
	All ages	2,066	27·7	68·9	74·3	151·3	59·7	73·1	79·8	102·1	22·2	124·5	44·7

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AIRMAN PILOTS.													
At home - -	Under 25 -	101	22·3	64·9	74·2	134·8	61·1	74·0	79·6	105·5	21·8	126·1	46·8
	25–30 -	35	26·3	67·8	73·3	142·9	58·1	74·6	81·2	104·7	21·0	130·3	48·1
	31 and over -	—	—	—	—	—	—	—	—	—	—	—	—
Total at home -		136	23·4	65·6	73·9	136·8	60·3	74·2	80·0	105·3	21·6	127·2	47·2
Abroad - -	Under 25 -	32	23·0	63·6	76·1	153·4	57·7	75·7	81·9	103·1	19·4	127·6	45·4
	25–30 -	43	26·1	64·4	72·9	153·5	59·0	75·1	81·9	102·4	19·1	129·4	45·6
	31 and over -	—	—	—	—	—	—	—	—	—	—	—	—
Total abroad -		75	24·8	64·1	74·3	153·4	58·4	75·3	81·9	102·7	19·2	128·6	45·5
Total force -	Under 25 -	133	22·5	64·6	74·6	139·2	60·3	74·4	80·2	104·9	21·2	126·5	46·5
	25–30 -	78	26·2	65·9	73·1	148·7	58·6	74·9	81·6	103·4	20·0	129·8	46·8
	31 and over -	—	—	—	—	—	—	—	—	—	—	—	—
	All ages -	211	23·9	65·1	74·0	142·7	59·6	74·6	80·7	104·4	20·7	127·7	46·6

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TABLE XXIV.—AVERAGE RESULTS OF FURTHER TESTS OF OFFICERS OF THE GENERAL DUTIES BRANCH AND AIRMAN PILOTS, 1925.

Nature of test.	Officers fit for flying duties, 2,066.		Officers unfit for flying duties, 206.		Total Officers, 2,272.		Airman Pilots, 216.		Total Officers and Airman Pilots, 2,488.	
	Numbers.	Percentage.	Numbers.	Percentage.	Numbers.	Percentage.	Numbers.	Percentage.	Numbers.	Percentage.
Tremor: Absent	1,163	56	91	44	1,254	55	134	62	1,388	56
,, Present	903	44	115	56	1,018	45	82	38	1,100	44
Self-balancing: Steady	1,951	94	173	84	2,124	94	215	99	2,339	94
,, Unsteady	115	6	33	16	148	6	1	1	149	6
Knee-jerks: Normal	1,765	85	158	77	1,923	85	170	79	2,093	84
,, Abnormal	301	15	48	23	349	15	46	21	395	16
Vision: 6/6 both eyes	1,955	95	152	74	2,107	92	214	99	2,321	93
,, 6/6 and 6/9: 6/9 and 6/9	63	3	21	10	84	4	2	1	86	4
,, Over 6/9 in either eye	48	2	33	16	81	4	--	--	81	3
Nasopharynx: Normal	1,976	96	186	90	2,162	95	207	96	2,369	95
,, Abnormal	90	4	20	10	110	5	9	4	119	5
Teeth: No treatment required	1,633	79	156	76	1,789	79	176	82	1,965	79
,, Treatment required	433	21	50	24	483	21	40	18	523	21
Pyorrhœa: Absent	2,047	99	200	97	2,247	99	213	99	2,460	99
,, Present	19	1	6	3	25	1	3	1	28	1

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TABLE XXV.—REASONS OF UNFITNESS (TEMPORARY OR OTHERWISE) FOR FULL FLYING DUTIES OF 206 OFFICERS OF THE GENERAL DUTIES BRANCH.

Defect.	At home.	Abroad.	Total.
Vision	38	20	58
Ears or teeth	8	2	10
Medical	45	12	57
Surgical	49	8	57
D.P.E.	5	6	11
D.P.E. and vision	—	2	2
D.P.E. and medical	7	1	8
D.P.E. and surgical	2	—	2
D.P.E. and ears or teeth	—	1	1
	154	52	206

TABLE XXVI.—RECRUITS.

Medical Reasons for Rejection at Recruiting Depôts.

(1)	Loss or decay of many Teeth	372
(2)	Diseases of Heart (D.A.H.: V.D.H.)	270
(3)	Poor Physique	200
(4)	Diseases of Ears (inc. deafness)	195
(5)	Deformities of Feet	181
(6)	Diseases of Lungs	171
(7)	Defects of Vision	152
(8)	Defects of Extremities	50
(9)	Diseases of Nervous System	48
(10)	Affections of Cutaneous System	44
(11)	Albuminuria	43
(12)	Diseases of Eyes and Eyelids	41
(13)	Hernia and Buboncele	38
(14)	Diseases of Joints	34
(15)	Diseases of Veins (Varix)	30
(16)	Varicocele	26
(17)	Malformation of Chest and Spine	23
(18)	Diseases of Urinary Organs	18
(19)	History of Bed-wetting	17
(20)	Ulcers, Wounds and Cicatrices	16
(21)	Other Causes	125
		2,094

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Table XXVII.—Accepted Recruits.

Average physical measurements by age groups.

Age last birthday.	Number accepted.	Height.	Weight.	Chest.		
				Max.	Min.	Range.
		Ft. In.	Lb.	In.	In.	In.
14–17 - - 1925	855	5 5·5	117·5	33·1	30·2	3·0
1920–1924	*4,695*	*5 4·8*	*111·6*	*32·3*	*29·6*	*2·7*
18 - - - 1925	898	5 7·1	126·0	35·1	32·2	2·8
1920–1924	*5,639*	*5 6·5*	*124·9*	*35·0*	*32·4*	*2·7*
19 - - - 1925	453	5 7·2	128·1	35·4	32·5	2·9
1920–1924	*3,488*	*5 6·6*	*127·2*	*35·3*	*32·6*	*2·7*
20 - - - 1925	281	5 7·0	128·7	35·5	32·5	2·9
1920–1924	*2,301*	*5 7·2*	*129·0*	*35·6*	*32·9*	*2·7*
21 - - - 1925	220	5 6·8	129·3	35·7	32·7	3·0
1920–1924	*1,715*	*5 6·6*	*130·1*	*35·8*	*33·0*	*2·8*
22 - - - 1925	107	5 7·0	129·9	35·8	32·9	2·8
1920–1924	*1,280*	*5 6·6*	*130·5*	*35·8*	*33·1*	*2·7*
23 - - - 1925	72	5 7·0	130·0	35·7	32·8	2·9
1920–1924	*899*	*5 6·6*	*131·4*	*36·0*	*33·3*	*2·7*
24 - - - 1925	65	5 6·6	131·7	36·2	33·5	2·7
1920–1924	*680*	*5 6·6*	*131–5*	*36·1*	*33·4*	*2·7*
25 - - - 1925	37	5 6·8	131·2	36·0	32·9	3·1
1920–1924	*535*	*5 6·7*	*133·3*	*36·2*	*33·5*	*2·7*
26 - - - 1925	51	5 6·8	134·3	36·3	33·4	2·9
1920–1924	*649*	*5 6·6*	*133·1*	*36·3*	*33·6*	*2·7*
27 and over - 1925	74	5 7·0	132·1	36·3	33·5	2·8
1920–1924	*1,812*	*5 6·8*	*137·2*	*36·7*	*34·0*	*2·7*
Total - 1925	3,113	5 6·6	125·1	34·8	31·9	2·9
1920–1924	*23,693*	*5 6·2*	*125·5*	*34·9*	*32·2*	*2·7*

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TABLE XXVIII.—VACCINATION RESULTS DURING 1925.

——	Primary vaccinations.							Re-vaccinations.							Total.		
	1 Vesicle.	2 Vesicles.	3 Vesicles.	4 Vesicles.	Total successful.	Failures.	Total.	1 Vesicle.	2 Vesicles.	3 Vesicles.	4 Vesicles.	Total successful.	Failures.	Total.	Successful.	Failures.	Number vaccinated.
United Kingdom	1	20	60	213	294	—	294	274	465	594	3,378	4,711	823	5,534	5,005	823	5,828
Malta - -	—	2	9	3	14	—	14	—	37	64	16	117	2	119	131	2	133
Egypt and Palestine.	1	3	9	11	24	7	31	5	24	34	47	110	104	214	134	111	245
Iraq - - -	—	—	—	—	—	—	—	99	134	373	158	764	385	1,149	764	385	1,149
India - -	—	2	4	9	15	2	17	43	56	186	26	311	345	656	326	347	673
Total abroad -	1	7	22	23	53	9	62	147	251	657	247	1,302	836	2,138	1,355	845	2,200
Total force -	2	27	82	236	347	9	356	421	716	1,251	3,625	6,013	1,659	7,672	6,360	1,668	8,028
Percentage -	0·6	7·6	23·0	66·3	97·5	2·5	100	5·5	9·3	16·3	47·3	78·4	21·6	100	79·2	20·8	100

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TABLE XXIX.—SUMMARY OF LABORATORY WORK CARRIED OUT IN ROYAL AIR FORCE DURING 1925.

Nature of Specimen Examined.	United Kingdom.			Abroad.					Total.
				Hinaidi.					
	Central Laboratory.	Cranwell.	Halton.	British.	Indian.	Basrah.	Mosul.	Palestine.	
Analyses :—									
Fæces	23	—	—	8	—	2	—	3	36
Gastric	21	2	5	2	—	3	—	4	37
Urine	862	171	4,218	864	64	675	27	449	7,330
Food	14	—	3	2	—	2	—	7	28
Sewage	45	—	—	—	—	—	—	—	45
Water	145	13	—	—	—	169	—	19	346
Blood :—									
Agglutinations	168	—	22	54	—	26	—	11	281
Coagulation time	11	—	—	—	—	—	—	—	11
Counts	309	6	228	149	19	65	—	37	813
Cultures	165	2	23	65	—	18	—	17	290
Malaria parasites	241	8	195	447	336	2,321	419	233	4,200
Sugar tests	115	—	5	6	—	—	—	—	126
Urea tests	108	—	9	—	—	—	—	—	117
Van den Bergh's tests	22	—	—	—	—	—	—	—	22
Wassermann tests	251	16	223	344	—	228	—	—	1,062
Cerebro-spinal Fluid :—									
Bio-chemical tests	12	—	—	—	—	1	—	—	13
Cell counts	14	2	—	1	—	2	—	—	19
Complement deviation	10	—	—	—	—	1	—	—	11
Cultures	14	2	1	2	—	1	—	—	20
Meningococcus	6	—	1	—	—	1	—	—	8
Tubercle bacillus	11	—	—	—	—	1	—	—	12
Discharge for :—									
B. Ducrey	2	—	—	—	18	2	—	14	36
Gonococcus	63	229	157	534	215	432	49	307	1,986
Spirochæta	19	—	4	16	32	7	10	15	103
Fæces for :—									
Bacteria	686	—	215	250	—	148	—	150	1,449
Protozoa	493	—	584	2,947	112	399	423	274	5,232
Helminths	60	—	7	80	34	39	3	181	404
Pathological specimens	24	1	4	11	—	19	—	2	61
Peri-dental smears	34	—	1	—	2	2	—	—	39
Pus :—									
For pyogenic organisms	38	17	—	24	8	35	—	11	133
For Leishmania	7	—	10	20	—	15	—	3	55
Renal efficiency tests	102	—	29	4	—	—	—	1	136
Septic fluids	57	—	12	3	29	72	—	—	173
Sputa :—									
General	108	36	15	18	20	12	—	49	258
Tubercle bacillus	189	12	301	265	70	43	19	72	971
Throat swabs	221	25	225	334	12	218	—	31	1,066
Vaccines—Autogenous	103	1	14	13	—	8	—	24	163
Miscellaneous	183	22	16	9	2	72	—	34	338
Urine for bilharzia	18	—	14	12	2	21	—	133	200
Hæmagglutinins	148	—	—	—	—	—	—	—	148
Dissection mosquitoes	120	—	—	—	—	—	—	—	120
TOTAL	5,242	565	6,541	6,484	975	5,060	950	2,081	27,898

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Table XXX.—Dental Treatment—1925.

Nature of treatment.	United Kingdom (Average strength, 23,838).		Mediterranean Littoral (Average strength, 3,632).		India (Average strength, 1,959).	Iraq (Average strength, 3,599).	Total (Average strength, 33,028).	
	By R.A.F. dental surgeons.	By Royal Navy, Army or civil dental surgeons.	By R.A.F. dental surgeons.	By Royal Navy, Army or civil dental surgeons.	By Royal Navy, Army or civil dental surgeons.	By R.A.F. dental surgeons.	By R.A.F. dental surgeons.	By Royal Navy, Army or civil dental surgeons.
Fillings - - - - -	19,055	274	2,789	356	330	1,914	23,758	960
Scalings - - - - -	2,354	45	719	29	86	488	3,561	160
Extractions - - - - -	9,040	163	1,370	138	255	1,453	11,863	556
Root fillings - - - -	1,417	23	82	36	24	45	1,544	83
*Number of dentures supplied	319	11	140	6	11	188	647	28
	(245)	(7)	(121)	(3)	(8)	(156)	(522)	(18)
Number of repairs to dentures	59	4	54	9	7	174	287	20
Remodels - - - -	91	3	73	3	4	54	218	10

* Figures in brackets are the actual number of patients supplied with dentures.

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Table XXXI.—Personnel other than Royal Air Force treated in Royal Air Force Hospitals and Station Sick Quarters.

Iraq.

———	Admissions.	Deaths.	Average constantly sick.
British army troops - -	962	1	44·1
Indian troops - - -	1,303	3	92·6
Indian followers - - -	838	13	55·7
Royal Navy - - - -	28	—	2·8
All others - - - -	95	3	4·4
Total - -	3,226	20	199·6

Palestine.

British army troops - -	199	—	10·1
British gendarmerie - -	138	1	6·4
All others - - - -	67	—	2·4
Total - -	404	1	18·9

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TABLE XXXII.—SURGICAL OPERATIONS PERFORMED ON R.A.F. PERSONNEL DURING 1925.

Nature of Operation.	Place of Operation.			Totals.
	R.A.F. Sick Quarters.	R.A.F. Hospitals.	Royal Navy, Army and other Hospitals.	
Amputations	—	20	13	33
Appendicectomy	1	116	30	147
Other abdominal operations	—	8	9	17
Avulsion of nails	8	52	15	75
Circumcision	2	28	19	49
Evacuation of abscesses and boils	64	136	45	245
For hæmorrhoids	—	41	11	52
For hydrocele	—	7	4	11
For varicocele	—	3	4	7
For varix	—	8	8	16
Herniotomy	—	46	14	60
On ear and mastoid process	—	4	1	5
On eyes	3	6	5	14
On joints	—	30	6	36
On nose	—	16	18	34
Reduction of fractures and dislocations	34	107	49	190
Removal of tonsils or adenoids	—	39	25	64
Removal of tumours, cysts, or bursæ	2	51	14	67
Suture of wounds	18	26	9	53
Wiring or plating fractures	—	11	5	16
All other operations	4	52	21	77
Total	136	807	325	1,268

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REPORT

ON THE

HEALTH OF THE ROYAL AIR FORCE

FOR THE YEAR

1926.

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REPORT

ON THE

HEALTH OF THE ROYAL AIR FORCE

FOR THE YEAR

1926.

The following Report on the Health of the Royal Air Force for the Year 1926 is issued for the information and guidance of all concerned.

By Command of the Air Council,

W. Nicholson

AIR MINISTRY,

Published December, 1927.

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AIR MINISTRY,
KINGSWAY,
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To The Secretary of the Air Council.

SIR,

I HAVE the honour to submit the accompanying Report on the health of the Royal Air Force at home and abroad during 1926.

The incidence of sickness, of deaths and of the number of sick daily is slightly higher than in 1925, but that of invaliding shows an appreciable decrease. A further decrease in the incidence of venereal disease has been effected and the figure is considered highly satisfactory.

Eighty-nine per cent. of the officers of the general duties branch were found to be fit for full flying duties at their annual medical examination.

Experiments with the flying aptitude apparatus were carried out at No. 2 Flying Training School and the results are described in chapter IV.

I have the honour to be, Sir,
Your obedient Servant,

DAVID MUNRO,
Director of Medical Services,
Royal Air Force.

November, 1927.

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Monthly, abroad	18	40
At principal stations abroad	17	39
Efficiency Tests. Physical—		
Officers and airman pilots (serving)	24	66
Candidates for flying duties	20	62
Flying.		
Casualties	11	17
Efficiency tests, physical—		
(*a*) candidates	20	62
(*b*) serving officers..	24	66
Further tests, physical	23	65
Fitness for—		
(*a*) candidates	19	61
(*b*) serving officers..	22	64
Reasons of unfitness for—		
(*a*) candidates	21	63
(*b*) serving officers..	25	68
Hospitals, R.A.F. Cases other than R.A.F. admitted to	29	70
Incidence of—		
Dysentery, Sandfly fever, Malaria .. .. (*a*) monthly abroad	18	40
Dysentery, Sandfly fever, Malaria .. .. (*b*) at principal stations abroad	17	39
Sickness—		
Home, Abroad, Total Force (*a*) nosological	12	18
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Home, Abroad, Total Force (*c*) by disease and injury group ..	3	9
Home, Abroad, Total Force (*d*) by age group	5	10
Home, Abroad, Total Force (*e*) by type of unit	8	14
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Monthly, abroad	18	40
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Subject.	Table.	Page
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Efficiency tests, physical	24	66
Fitness for flying duties	22	64
Sickness	9	15
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Operations, surgical	30	71
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Rejection, medical reasons	26	68
Rejection. Medical reasons.—		
Candidates for flying duties	21	63
Recruits	26	68
Sandfly Fever, incidence and numbers of cases of—		
Monthly abroad	18	40
At principal stations abroad	17	39
Sick, daily—		
Total at home, abroad, and total force	1	viii
Total at home, abroad, and by disease	12	18
Venereal Disease	6	11

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TABLE I.—SICKNESS AT HOME AND ABROAD—ANALYSED BY GEOGRAPHICAL AREAS.

Geographical Area.	Average strength.	Fresh cases of sickness.			Deaths.	Invalided out of service.	Invalided to United Kingdom.	Average duration of each case in days.		Average No. of days sickness per head.		Incidence per 1,000 of strength.						
		Less than 48 hours.	More than 48 hours.	Total.				48-hour cases included.	48-hour cases excluded.	48-hour cases included.	48-hour cases excluded.	Fresh cases of sickness.		Deaths.	Invalided out of service.	Invalided to United Kingdom.	No. sick daily.	
												48-hour cases included.	48-hour cases excluded.				48-hour cases included.	48 hour cases excluded.
United Kingdom—																		
1926..	23,958	6,692	8,282	14,974	82	213	—	11·5	19·7	7·2	6·8	625·1	345·7	3·4	8·9	—	19·7	18·6
1925..	*23,838*	*9,217*	*9,205*	*18,452*	*74*	*239*	—	*9·0*	*16·7*	*7·0*	*6·4*	*774·1*	*386·1*	*3·1*	*10·0*	—	*19·1*	*17·6*
Average, 1921–24	*21,452*	*10,272*	*8,122*	*18,394*	*69*	*292*	—	*8·8*	*18·1*	*7·5*	*6·8*	*857·5*	*378·6*	*3·2*	*13·6*	—	*20·5*	*18·6*
Mediterranean Littoral—																		
1926..	3,528	1,739	1,739	3,478	28	8	59	10·3	19·2	10·2	9·5	985·8	492·9	7·9	2·3	16·7	27·9	26·0
1925..	*3,632*	*2,178*	*1,613*	*3,791*	*21*	*22*	*56*	*8·9*	*18·8*	*9·3*	*8·4*	*1043·7*	*444·1*	*5·8*	*6·1*	*15·4*	*25·5*	*22·9*
Average, 1921–24	*3,669*	*2,458*	*2,216*	*4,674*	*19*	*22*	*59*	*9·7*	*18·9*	*12·4*	*11·4*	*1274·0*	*604·0*	*5·0*	*6·1*	*15·4*	*33·9*	*31·2*
Iraq—																		
1926..	3,536	2,062	3,265	5,327	24	9	57	11·5	17·8	17·3	16·5	1506·5	923·4	6·8	2·5	16·1	47·4	45·2
1925..	*3,599*	*2,415*	*2,661*	*5,076*	*28*	*31*	*114*	*12·4*	*22·4*	*17·4*	*16·5*	*1410·4*	*739·4*	*7·8*	*8·6*	*31·7*	*47·7*	*45·3*
Average, 1921–24	*2,712*	*3,193*	*2,726*	*5,919*	*25*	*17*	*80*	*8·9*	*17·8*	*19·5*	*17·9*	*2182·4*	*1005·1*	*9·2*	*6·2*	*29·5*	*53·4*	*49·0*
India—																		
1926..	1,963	1,116	1,527	2,643	19	10	31	8·3	13·2	11·1	10·3	1346·4	777·9	9·7	5·1	15·8	30·4	28·2
1925..	*1,959*	*1,152*	*1,292*	*2,444*	*15*	*15*	*85*	*8·9*	*15·6*	*11·1*	*10·3*	*1247·6*	*659·5*	*7·7*	*7·7*	*43·4*	*30·4*	*28·2*
Average, 1921–24	*1,827*	*2,851*	*1,366*	*4,217*	*16*	*12*	*44*	*6·6*	*17·3*	*15·2*	*12·9*	*2308·0*	*747·4*	*9·0*	*6·7*	*24·2*	*41·6*	*35·3*
Total, Abroad—																		
1926..	9,027	4,917	6,531	11,448	71	27	147	10·4	17·1	13·2	12·4	1268·2	723·6	7·9	3·0	16·3	36·1	34·0
1925..	*9,190*	*5,745*	*5,566*	*11,311*	*64*	*68*	*255*	*10·5*	*19·8*	*12·9*	*12·0*	*1230·8*	*605·7*	*7·0*	*7·4*	*27·7*	*35·2*	*32·8*
Average, 1921–24	*8,208*	*8,502*	*6,308*	*14,810*	*60*	*51*	*183*	*8·5*	*18·1*	*15·4*	*13·9*	*1804·5*	*768·6*	*7·3*	*6·2*	*22·4*	*42·2*	*38·1*
Total Force—																		
1926..	32,985	11,609	14,813	26,422	153	240	147	11·0	18·5	8·9	8·3	801·1	449·1	4·6	7·3	16·3	24·4	22·7
1925..	*33,028*	*14,992*	*14,771*	*29,763*	*138*	*307*	*256*	*9·6*	*17·8*	*8·6*	*8·0*	*901·1*	*447·2*	*4·2*	*9·3*	*27·7*	*23·6*	*21·8*
Average, 1921–24	*29,660*	*18,774*	*14,430*	*33,204*	*129*	*343*	*183*	*8·6*	*18·1*	*9·7*	*8·8*	*1119·4*	*486·5*	*4·4*	*11·6*	*22·4*	*26·6*	*24·1*

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CHAPTER I.—THE HEALTH OF THE ROYAL AIR FORCE AS A WHOLE DURING 1926.

General.

1. The total sickness which occurred in the Royal Air Force during 1926 is analysed in Table I, page viii, which shows in addition, for the purpose of comparison, the corresponding figures for 1925 and the average of the four preceding years.

2. The term "total abroad" relates to personnel of the Royal Air Force in Iraq, India, and the Mediterranean Littoral; the last named includes Malta and personnel of the aircraft carriers in the Mediterranean (average strength 571), Egypt and Palestine (2718), and drafts *en route* to and from the United Kingdom (239).

3. The average strength of the total force during 1926 was 32,985, and the total number of cases of disease and injury was 26,422, equivalent to a case incidence of 801·1 per 1,000 of strength compared with 901·1 in 1925 and an average of 1119·4 for the period 1921–4. Excluding cases of less than 48 hours' duration, the case incidence was 449·1 compared with 447·2 in 1925 and an average of 486·5 over the four-yearly period. The number of sick daily per 1,000 of strength, including 48-hour cases, was 24·4 compared with 23·6 in 1925 and an average of 26·6 from 1921 to 1924. If cases of less than 48 hours' duration are excluded the number sick daily becomes 22·7 per 1,000. The average duration of each case at home, excluding 48-hour cases, during 1926 was 19·7 days compared with 16·7 in 1925, while the corresponding figures abroad were 17·1 and 19·8.

The case incidence at home is lower than during 1925 and the decrease is considered to be largely due to the great reduction in the number of cases of influenza, 472 compared with 1,080 in 1925, and to the lower incidence of diseases of the upper air passages, 61·6 per 1,000 in 1926 compared with 73·4 per 1,000 in 1925. Abroad, the increase in sickness incidence is to be attributed chiefly to the increased number of cases of malaria both in India and Iraq, 648 and 662 compared with 463 and 363 respectively. These outbreaks are referred to again at greater length in chapter IV.

The increased average duration of each case of sickness at home is largely due to the reduction in the number of cases of influenza with its low average duration per case; and abroad the increase in the number of cases of malaria with its relatively low average duration per case accounts largely for the reduction in the average duration per case.

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4. Deaths and final invalidings are analysed in table II, page 8, by disease and injury groups. Forty-one deaths from disease and 112 from injury occurred during 1926 compared with 36 and 102 respectively in 1925. Two hundred and forty cases were finally invalided, 223 for disease and 17 for injury, compared with 282 and 25 respectively in 1925. In addition 25 time-expired airmen were found to be unfit under present standards for service in the reserve.

The 41 deaths from disease were as follows :—

Pneumonia	6
Pulmonary tuberculosis	6
Appendicitis	3
Typhoid fever	3
Malaria	3
Gastric ulcer	3
Cerebro spinal fever	2
Pyæmia	2
Sarcoma	2
Poisoning	2
Dysentery	1
Cerebral abscess	1
Cerebral embolism	1
Acute pericarditis	1
Valvular disease of the heart	1
Arteriosclerosis	1
Leukæmia	1
Stricture of the œsophagus	1
Diabetes	1

Included in the 112 deaths from injury are five cases of heat hyperpyrexia which occurred in Iraq during July and early August ; these cases are referred to again in chapter IV.

The chief causes of invaliding during 1926 were as follows :—

Chronic suppurative otitis media	32	
Psychoneurosis	30	
Tuberculosis, pulmonary	22	28
,, other	6	
Mental diseases	12	
Valvular disease of the heart	12	
Epilepsy	9	
Defective vision	8	
Flat foot	6	

5. Table III, page 9, analyses the main disease and injury groups. The case incidence for all diseases was 372·1 per 1,000 compared with 379·1 in 1925 and an average of 419·3 for the 1921–24 period. The incidence of injury, however, rose from 68·1 in 1925 to 77·0 per 1,000 in 1926.

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The average duration of each case of disease fell from 20·5 days in 1925 to 18·9 in 1926, while the corresponding figure for injury remained practically the same, 20·4 days.

6. The incidence of disease and injury by age groups is analysed in table V, page 10, the sickness of officers being shown as a whole as their relatively small number does not justify a division into age groups. The youngest age group shows the highest incidence both of total disability and of disease, 579·7 and 504·4 per 1,000 respectively; these figures are considerably above the average although the injury incidence in this group is below the average. In 1925 the same group showed the highest disability incidence and the group 24–25 in both years returned the next highest figure.

In 1925 the age group 18–19 showed the lowest disability incidence, with the group 35–39 next in order, while in 1926 the group 30–34 returned the lowest disability incidence with the group 40 and over occupying second and the group 35–39 third place. It should, however, be noted that the average strength of both of the last two groups is considerably lower than that of the others.

7. Table XII, page 18, is the main nosological table and analyses the diseases, injuries, deaths and invalids in the force at home, abroad and as a whole.

8. The diseases or groups of diseases in table XII, marked with an asterisk, are analysed in greater detail in table VII, page 12.

Venereal Disease.

9. An analysis of the incidence of the various forms of venereal disease at home and abroad during 1926 is given in table VI, page 11. The incidence of all types was 17·1 per 1,000 of strength, a reduction of fifty per cent. on the 1921 figure and a continuation of the yearly reduction which has been effected since that year. The average number of sick daily from venereal disease was 91·3 and the average duration per case 59 days. The continued decrease in the incidence of this group of diseases is considered to be due to the unabated prosecution of those preventive measures which have been described in earlier reports.

Upper Air Passage Infections.

10. The incidence of upper air passage infections for the force as a whole was lower than in 1925, 61·5 compared with 68·1 per 1,000. At home the figure fell from 73·4 to 61·6 while abroad it rose in Iraq from 47·0 to 56·3, in India from 41·9 to 45·3 and in the Mediterranean Littoral from 68·0 to 75·4.

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Pulmonary Tuberculosis.

11. Thirty-six cases of pulmonary tuberculosis which occurred during 1926 are analysed in table IV, page 10, by age group, trade, years of service and the country where the disease was notified. In four cases only out of 36 was a tubercular family history recorded. Twenty-two cases were finally invalided, but of these three cases were reported in 1925 and had remained over at the end of the year. Six deaths occurred, two of which were 1925 cases. In 1925 there were 27 cases with 30 invalids (seven of which were 1924 cases) and one death.

Disease and Injury in different Types of Unit.

12. An analysis of sickness sub-divided into disease and injury in different types of unit at home and abroad is shown in table VIII, page 14.

The incidence of sickness for the total force was 449·1 per 1,000 of strength, and of disease and injury 372·1 and 77·0 respectively. The decreased proportion of disease to injury, 4·8 to 1 compared with 5·6 to 1 in 1925, was due to the combined effect of the increase in the incidence of injury during 1926 and the decrease in that of disease. At home the proportion of disease to injury was 3·8 to 1 and abroad 7·1 to 1 compared with 4·8 to 1 and 7·5 to 1 respectively in 1925. The incidence of disease abroad was 132 per cent. greater than that at home, and the incidence of injury abroad also shows an increase of 23 per cent. on the corresponding figure at home.

Both at home and abroad the miscellaneous units show the highest proportion of disease to injury, the depôts the next highest and flying units the lowest. It is of interest to note that even if casualties in flying accidents are excluded the flying units group still shows the lowest proportion.

Disease and Injury in various Trade Groups.

13. Injuries, and certain diseases which were selected as being the chief causes of medical non-effectiveness during 1926, are analysed by trade groups in table IX, page 15.

The highest disability incidence occurred amongst drivers and the lowest amongst apprentices; the group, officers, cadets and airman pilots, showed the next lowest incidence. The highest injury incidence was found in the fitter group with the group, officers, cadets and airman pilots, second, while the lowest incidence was shown by the apprentice group. The highest disease

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incidence occurred among drivers and the lowest among officers, cadets and airman pilots. The incidence of venereal disease was highest among aircrafthands and lowest in the apprentice group. The group, officers, cadets and airman pilots, showed the next lowest incidence.

Injuries.

14. Injuries sustained during 1926 are analysed by their nature and cause in table X, page 16. Cases of heatstroke, sunstroke and heat exhaustion, which are not strictly injuries for the purpose of this analysis, have been excluded and those injuries shown under athletics are classified as on duty or off duty according to whether they were sustained in organised or unorganised games respectively.

The total number of cases of injury from all causes during 1926 was 2517, equivalent to a case incidence of 76·3 per 1,000 compared with 67·8 in 1925. Sixty per cent. of the injuries were sustained on duty, 38 per cent. off duty and in 2 per cent. of the cases details were not available as to whether on or off duty. As in previous years the commonest site of injury was the lower limb—48 per cent. of the total as compared with 48 per cent. in 1925, 49 per cent. in 1924, 50 per cent. in 1923, 49 per cent. in 1922, and 47 per cent. in 1921. Flying accidents accounted for 7·1 per cent. of the total injuries in 1926 compared with 6·9 per cent. in 1925 and 7·5 per cent. in 1924.

15. *Injuries sustained in flying accidents.*—Flying accidents on duty are analysed in table XI, page 17, and are compared with the corresponding figures for 1925 and 1924.

Considering the number of flying accidents in relation to the number of hours flown, the casualty risk during 1926 was lower than in previous years. The total number of casualties was 179, of which 78 were deaths—a percentage of 44 compared with an average percentage of 41 over the previous five-yearly period. One collision was responsible for five out of the 78 deaths. All the officers injured or killed in flying accidents, with the exception of one stores officer, belonged to the general duties branch. Of the airmen nine were qualified pilots or under training as such, 22 were fitters 18 belonged to the carpenter and rigger group and the remaining 21 were spread over the other groups.

16. *Injuries caused by airscrews.*—During 1926, 29 cases of injury due to airscrews were reported as compared with 33 in 1925, and of these 16 occurred amongst fitters, eight amongst carpenters and riggers, three amongst officers and one each amongst aircrafthands and metal workers. There were two deaths and one invalid from this cause.

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17. *Injuries sustained whilst starting engines.*—(Injuries sustained while starting aircraft engines have been included in the figures given in para. 16.) The majority of accidents are due to a "back fire," and during 1926 47 cases were recorded as compared with 43 in 1925 and 51 in 1924. There were no deaths nor invalids and the average duration of each case was 26 days. As would be expected the commonest injuries were fracture of the lower end of the right radius, 15 cases, and colles fracture, six cases.

18. *Injuries caused by motor vehicles other than whilst starting engines.*—493 accidents occurred during 1926 and resulted in 15 deaths and eight invalids. The cases may be divided into the following groups :—

(i) *Motor cycles.*—390 cases, or practically 80 per cent. of motor accidents and 16 per cent. of all acccidents, were recorded. 368 of these occurred off duty and resulted in 12 deaths ; 22 occurred on duty and in no case led to fatal results.

(ii) *Occupants of lorries and tenders.*—47 cases, 43 of which were on duty and resulted in one death and four of which were off duty with no deaths, were reported during the year.

(iii) *Occupants of motor cars.*—Of the 28 cases in this group 27 occurred off duty. There were no deaths nor invalids.

(iv) *Non-occupants of vehicles.*—28 cases resulting in two deaths and one invalid were reported. Six cases were caused by R.A.F. transport and twelve by civil transport while in the remaining ten cases details of the ownership of the vehicles were not available.

19. *Injuries sustained in athletics.*—A total of 965 cases, equivalent to an incidence of 28·7 per 1,000 and resulting in one death, were reported during 1926 compared with 851 cases, an incidence of 25·8 and five deaths in 1925, and 820 cases, an incidence of 25·9 and three deaths in 1924. The one death was the result of bathing off duty. 812 cases occurred on duty, 143 off duty, and in 10 cases there were no details available as to whether on or off duty. Football, as in previous years, accounted for the majority of accidents under this heading—68 per cent. compared with an average over the previous five-yearly period of 70·6 per cent. The commonest injuries were acute synovitis of the knee, 132 cases, and sprained ankle, 119 cases. These two forms of injury have proved the most frequent each year.

20. *Wounds in action.*—There were no wounds in action during 1926.

21. *Accidental gunshot wounds.*—There were 14 accidents resulting in two deaths due to this cause during 1926, compared with 13 and one death in 1925, and 22 and three deaths in 1924.

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22. *Injuries sustained during parachute descents.*—Seven cases of injury with no fatal results occurred in 1926.

23. *Injuries caused by animals.*—Of the 13 cases of injury recorded under this cause, 12 were the results of dog bites and one of a monkey bite. There were no deaths and no invalids. In 1925 there were 13 cases, no deaths and one invalid.

24. *Other injuries sustained on duty.*—374 cases resulting in one death and four invalids were reported during 1926 compared with 325 cases, three deaths, and no invalids in 1925. The average duration of each case was 17 days compared with 18·3 days in 1925.

25. *Other injuries sustained off duty.*—324 cases with eight deaths and two invalids occurred during 1926 with an average duration per case of 17·5 days. The corresponding figures in 1925 were 333, 16·0 and 13·7.

26. *Other injuries on leave.*—54 cases and no deaths were reported in 1926 compared with 54 cases and one death in 1925. The average duration per case was 12·5 days compared with 16·6 days in 1925.

27. Included in the injuries off duty or on leave were seven cases of suicide resulting in six deaths, and two cases of self-inflicted wounds.

28. Eighteen cases of injury for which complete details were not available have not been included in the analysis of causes given above.

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TABLE II.—SICKNESS, DEATHS AND INVALIDS.

Disease Group.	1926.			Percentage of Total.								
				Cases.			Deaths.			Invalids.		
	Cases.	Deaths.	Invalids.	1926.	1925.	1921-4.	1926.	1925.	1921-4.	1926.	1925.	1921-24.
Dysentery	172	1	—	1·2	*1·5*	*1·4*	0·7	—	*0·4*	—	—	*0.2*
Enteric group ..	47	3	—	0·3	*0·3*	*0·2*	2·0	*3·6*	*1·9*	—	—	—
Influenza	631	—	—	4·3	*7·7*	*5·7*	—	—	*0·2*	—	—	—
Malaria	1,511	3	1	10·2	*6·9*	*6·5*	2·0	*0·7*	*0·8*	0·4	—	*0·1*
Pneumonia ..	63	6	—	0·4	*0·4*	*0·5*	3·9	*1·5*	*6·0*	—	—	—
Pyrexia of unknown origin	33	—	—	0·2	*0·4*	*0·8*	—	—	*0·2*	—	—	—
Tuberculosis ..	47	6	28	0·3	*0·3*	*0·4*	3·9	*1·5*	*3·7*	11·7	*13·6*	*14·2*
Venereal diseases ..	565	—	—	3·8	*4·4*	*5·7*	—	—	—	—	*0·3*	*1·2*
Pyæmia and septicæmia	1	2	—	0·0	*0·0*	*0·0*	1·3	*1·5*	*2·5*	—	—	—
Other diseases due to infection	4,609	2	7	31·1	*32·2*	*33·5*	1·3	*1·5*	*1·7*	2·9	*1·3*	*1·7*
Contacts and carriers	38	—	—	0·3	*0·2*	*0·4*	—	—	—	—	—	*0·1*
Nervous system and brain	246	2	54	1·7	*1·6*	*2·1*	1·3	*2·9*	*2·1*	22·5	*25·1*	*24·8*
Eye	153	—	30	1·0	*0·9*	*1·1*	—	—	—	12·5	*8·8*	*7·2*
Ear and nose ..	264	—	35	1·8	*1·8*	*1·9*	—	—	—	14·6	*10·8*	*11·6*
Circulatory system	169	4	17	1·1	*1·0*	*1·3*	2·6	*2·2*	*2·7*	7·1	*5·5*	*8·2*
Lymphatic system ..	11	—	1	0·1	*0·0*	*0·1*	—	—	*0·2*	0·4	*1·0*	*1·1*
Respiratory system (excluding tuberculosis and pneumonia)	399	—	8	2·7	*3·2*	*2·8*	—	—	*1·5*	3·3	*5·2*	*4·1*
Teeth and gums ..	95	—	2	0·6	*0·6*	*0·6*	—	—	—	0·8	—	*0·1*
Digestive system ..	1,195	7	8	8·1	*8·0*	*7·3*	4·6	*8·7*	*4·4*	3·3	*4·2*	*3·6*
Disorders of nutrition and metabolism	10	1	1	0·1	*0·0*	*0·0*	0·7	—	*0·2*	0·4	*1·0*	*0·5*
Generative system ..	311	—	—	2·1	*1·7*	*1·6*	—	—	—	—	*0·3*	*0·1*
Organs of locomotion	440	—	24	3·0	*3·2*	*2·8*	—	—	—	10·0	*9·5*	*11·9*
Areolar tissue and skin	849	—	2	5·7	*6·0*	*6·7*	—	—	—	0·8	*0·3*	*1·3*
Urinary organs ..	78	—	4	0·5	*0·6*	*0·5*	—	*0·7*	*0·8*	1·7	*3·9*	*2·9*
Tumours and cysts	91	2	1	0·6	*0·6*	*0·5*	1·3	*1·5*	*1·2*	0·4	—	*0·6*
Poisons	64	2	—	0·4	*0·3*	*0·3*	1·3	—	*0·8*	—	—	*0·1*
Debility	60	—	—	0·4	*0·4*	*0·6*	—	—	—	—	*1·0*	*0·2*
Other diseases ..	122	—	—	0·8	*0·5*	*0·8*	—	—	—	—	—	*0·1*
Total: All diseases	12,274	41	223	82·9	*84·8*	*86·2*	26·8	*26·1*	*31·3*	92·9	*91·9*	*96·0*
Total: All injuries	2,539	112	17	17·1	*15·2*	*13·8*	73·2	*73·9*	*68·7*	7·1	*8·1*	*4·0*
Total: All disabilities	14,813	153	240	100·0	*100·0*	*100·0*	100·0	*100·0*	*100·0*	100·0	*100·0*	*100·0*

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TABLE III.—SICKNESS AT HOME AND ABROAD, ANALYSED BY DISEASE AND INJURY GROUPS.

Disease Group.	Case Incidence per 1,000 of strength.									Average duration of each case (days).								
	Home.			Abroad			Total Force.			Home.			Abroad.			Total Force.		
	Average 1921–24.	1925.	1926.	Average 1921–24.	1925.	1926.	Average 1921–24.	1925.	1926.	Average 1921–24.	1925.	1926.	Average 1921–24.	1925.	1926.	Average 1921–24.	1925.	1926.
Diseases caused by infection ..	176·6	191·4	153·4	500·8	372·8	443·6	226·3	241·9	232·8	17·2	14·1	17·6	15·8	17·3	14·7	16·5	15·5	16·1
Contacts and carriers	2·1	0·9	1·3	0·9	0·7	0·7	1·8	0·8	1·2	11·1	9·8	8·6	19·5	10·3	15·7	12·3	9·9	9·7
Effects of parasites	0·6	0·4	0·5	2·5	1·8	2·8	1·1	0·8	1·2	6·3	14·2	18·5	20·6	36·7	19·2	15·2	28·4	18·9
Diseases of nervous system and brain	9·3	6·0	5·9	12·6	10·0	11·7	10·2	7·1	7·5	29·4	33·8	41·4	54·7	56·6	53·4	38·0	42·7	46·6
Diseases of the eye	5·3	3·7	4·5	5·6	5·5	5·1	5·4	4·2	4·6	18·3	17·7	20·4	33·0	34·0	28·6	22·5	23·7	22·9
Diseases of the ear and nose ..	8·7	6·7	6·1	9·9	10·8	13·0	9·0	7·8	8·0	20·7	23·4	20·7	22·6	34·6	24·5	21·2	27·7	22·4
Diseases of the circulatory system	4·7	3·0	4·1	9·8	7·7	7·9	6·1	4·3	5·1	24·3	25·9	35·4	48·4	47·1	33·2	35·0	36·4	34·5
Diseases of the lymphatic and ductless glands	0·3	0·2	0·4	0·3	0·2	0·1	0·3	0·2	0·3	39·0	23·5	48·1	45·7	69·5	24·0	41·1	38·8	45·9
Diseases of the respiratory system	12·8	14·1	11·3	16·0	15·5	14·2	13·7	14·5	12·1	17·5	15·0	18·1	20·4	20·8	15·4	18·4	16·7	17·3
Diseases of the teeth and gums ..	2·8	2·9	2·8	3·5	2·2	3·1	3·0	2·7	2·9	9·5	9·3	9·4	10·0	15·4	9·5	9·6	10·7	9·4
Diseases due to disorders of nutrition or metabolism	0·2	0·2	0·3	0·1	0·3	0·4	0·2	0·2	0·3	31·3	38·2	16·3	17·5	76·7	25·0	29·8	54·7	19·8
Diseases of the digestive system	28·9	32·9	31·3	53·3	43·7	49·3	35·6	35·9	36·2	20·4	19·6	22·7	17·7	17·8	20·2	19·2	19·0	21·8
Diseases of the generative system	6·5	6·0	6·7	10·4	11·8	16·6	7·6	7·6	9·4	19·2	19·7	23·2	20·2	24·0	21·7	19·6	21·6	22·4
Diseases of the organs of locomotion	13·3	13·3	11·6	15·0	16·2	17·8	13·8	14·1	13·3	17·8	18·0	19·6	20·7	16·2	20·4	18·7	17·4	19·9
Diseases of the areolar tissue and skin	35·9	29·9	24·8	23·5	19·3	28·1	32·5	26·9	25·7	16·1	15·6	17·8	17·0	16·8	16·7	16·3	15·8	17·4
Diseases of the urinary organs ..	2·4	2·4	1·6	3·2	3·7	4·3	2·6	2·7	2·4	31·2	24·4	33·2	46·5	49·0	23·5	36·4	33·7	28·3
Tumours and cysts	2·6	2·4	2·8	2·6	3·6	2·5	2·6	2·8	2·8	18·0	15·0	21·1	25·1	17·6	16·6	20·0	16·0	20·0
Poisons	1·0	0·8	0·4	3·2	2·9	6·0	1·6	1·4	1·9	6·7	9·5	8·9	13·4	12·7	12·9	10·4	11·4	12·2
All other diseases	4·7	2·1	3·3	8·9	5·6	7·2	5·9	3·1	4·4	11·0	17·9	12·3	22·0	25·3	12·4	15·6	21·7	12·3
Total, all diseases	318·7	319·3	273·3	682·0	534·3	634·5	419·3	379·1	372·1	17·9	15·9	19·3	17·9	19·6	16·9	17·9	17·4	18·2
General injuries	4·7	6·3	6·3	18·3	9·0	10·7	8·5	7·1	7·5	16·1	19·7	18·1	15·1	21·8	20·1	15·5	20·5	18·9
Local injuries	55·2	60·5	66·1	68·0	62·4	78·4	58·8	61·0	69·5	19·2	20·2	21·3	20·6	21·1	18·9	19·7	20·5	20·5
Total, all injuries	59·9	66·9	72·4	86·3	71·4	89·1	67·2	68·1	77·0	19·0	20·2	21·0	19·4	21·2	19·0	19·1	20·5	20·4
Total, all disabilities	378·6	386·1	345·7	768·6	605·7	723·6	486·5	447·2	449·1	18·1	16·7	19·7	18·1	19·8	17·1	18·1	17·8	18·5

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TABLE IV.—PULMONARY TUBERCULOSIS.

Age.	No. of cases.			Trade.	No. of cases.	Years o service.	No. of cases.	Locality.	No. of cases.
	Home.	Abroad.	Total.						
Under 18 ..	—	—	—	Officers	3	1–2 years	5	Home	28
18 and 19 ..	4	—	4	Fitters	4	2–4 years	8	Iraq	3
20 and 21 ..	9	—	9	Carpen-	1	4–8 years	17	India	2
22 and 23 ..	1	1	2	ters and		Over 8	6	Egypt	
24 and 25 ..	5	3	8	Riggers.		years.			
26 and 27 ..	3	—	3	Drivers	3			Palestine	2
28 and 29 ..	—	2	2	Clerks	9			Malta	—
30 and 31 ..	—	—	—	Aircraft-	9				1
32 and 33 ..	2	—	2	hands.					
34 and 35 ..	1	1	2	Metal	2				
36 and 37 ..	1	1	2	Workers.					
38 and 39 ..	1	—	1	Other	5				
40 and 41 ..	1	—	1	Skilled					
				Trades.					
	28	8	36		36		36		36

TABLE V.—DISEASE AND INJURY ANALYSED BY AGE GROUPS.

Age last birthday.	Average strength.			Case incidence per 1,000 of strength.								
				Disease.			Injury.			All disabilities.		
	Home.	Abroad.	Total.	Home.	Abroad.	Total.	Home.	Abroad.	Total.	Home.	Abroad.	Total.
Airmen—												
Under 18 ..	1,939	—	1,939	504·4	—	504·4	75·3	—	75·3	579·7	—	579·7
18 and 19..	3,156	57	3,213	298·5	*	296·6	88·7	*	87·5	387·2	*	384·1
20 and 21..	3,092	1,111	4,203	286·6	675·1	389·2	67·9	83·7	72·1	354·5	758·8	461·3
22 and 23..	3,828	2,270	6,098	251·0	622·6	389·3	67·4	101·3	80·0	318·5	723·8	469·3
24 and 25..	4,177	2,205	6,382	257·4	696·1	409·0	75·9	89·3	80·6	333·3	785·8	489·6
26 and 27..	1,791	891	2,682	247·9	683·5	392·6	70·9	104·4	82·0	318·8	787·9	474·6
28 and 29..	1,043	467	1,510	239·7	621·0	357·6	48·9	72·8	56·3	288·6	693·8	413·9
30 to 34 ..	1,509	626	2,135	176·3	520·8	277·3	43·1	54·3	46·4	219·4	575·1	323·7
35 to 39 ..	655	254	909	235·1	582·6	332·2	41·2	47·2	42·9	276·3	629·9	375·1
40 and over	366	100	466	207·6	650·0	302·5	49·2	90·0	57·9	256·8	740·0	360·5
Total airmen ..	21,556	7,981	29,537	279·8	644·9	378·5	69·6	88·1	74·6	349·4	733·0	453·1
Total officers and cadets	2,402	1,046	3,448	214·8	554·6	317·8	98·3	96·6	97·7	313·1	651·1	415·5
Total: all ranks..	23,958	9,027	32,985	273·3	634·5	372·1	72·4	89·1	77·0	345·7	723·6	449·1

* Not calculated.

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TABLE VI.—VENEREAL DISEASE.

Disease.	Home.				Abroad.				Total Force.			
	No. of cases.	Case incidence per 1,000 of strength	Average.		No. of cases.	Case incidence per 1,000 of strength	Average.		No. of cases.	Case incidence per 1,000 of strength	Average.	
			No. sick daily.	Duration of case (days).			No. sick daily.	Duration of case (days).			No. sick daily.	Duration of case (days).
Gonorrhœa—Acute ..	276	11·5	48·9	64·7	127	14·1	22·7	65·4	403	12·2	71·7	64·9
Relapse ..	32	1·3	5·1	58·2	20	2·2	2·5	45·8	52	1·6	7·6	53·4
Total ..	308	12·8	54·0	64·0	147	16·3	25·2	62·7	455	13·8	79·3	63·6
Syphilis—Admissions :												
Primary	35	1·5	4·2	44·2	27	3·0	2·8	38·0	62	1·9	7·0	41·5
For further treatment	2	0·1	0·1	13·0	2	0·2	0·1	10·0	4	0·1	0·1	11·5
Total	37	1·6	4·3	42·5	29	3·2	2·9	36·0	66	2·0	7·2	39·7
Soft chancre	12	0·5	1·1	34·0	32	3·5	3·7	42·4	44	1·3	4·8	40·1
Total, Venereal disease 1926	357	14·9	59·5	60·8	208	23·0	31·8	55·9	565	17·1	91·3	59·0
1925	400	16·8	57·0	52·0	256	27·9	36·4	51·9	656	19·9	93·4	51·9
1924	432	19·2	59·3	50·3	272	30·0	44·0	59·2	704	22·3	103·3	53·8
1923	482	23·8	64·8	49·1	299	31·4	42·3	51·7	781	26·2	107·2	50·1
1922	525	24·9	76·1	52·9	263	33·5	34·4	47·7	788	27·2	110·5	51·2
1921	709	32·3	94·2	48·5	314	49·2	52·2	60·7	1,023	36·1	146·4	52·2

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TABLE VII.—DETAILED NOSOLOGICAL TABLE OF

Disease.	Home. Average strength, 23,958.				Mediterranean Littoral. Average strength, 3,528.			
	No. of cases.	Case incidence per 1,000 of strength.	Average.		No. of cases.	Case incidence per 1,000 of strength.	Average.	
			No. sick daily	Duration of case.			No. sick daily	Duration of case.
Diseases caused by Infection.				Days.				Days.
Dysentery—								
Clinical, primary ..	—	—	—	—	2	0·6	0·1	16·5
,, recurrent ..	1	0·0	0·0	11·0	1	0·3	0·0	8·0
Bacillary, primary ..	2	0·1	0·1	25·0	7	2·0	0·4	19·1
,, recurrent ..	—	—	—	—	—	—	—	—
Amœbic, primary ..	2	0·1	0·2	44·0	16	4·5	2·7	61·6
,, recurrent ..	10	0·4	1·0	34·9	7	2·0	1·7	88·0
Total—Dysentery ..	15	0·6	1·4	33·2	33	9·4	4·9	53·8
Enteric Group—								
Typhoid fever	3	0·1	0·4	54·3	16	4·5	2·6	58·4
Paratyphoid fever, A & B	—	—	—	—	3	0·9	0·4	52·7
Enteritis	104	4·3	2·6	9·0	97	27·5	2·1	8·0
Influenza	472	19·7	11·8	9·1	17	4·8	0·4	9·1
Malaria—								
Clinical, primary	—	—	—	—	5	1·4	0·1	10·8
,, recurrent ..	10	0·4	0·3	10·6	4	1·1	0·2	19·0
Benign tertian, primary ..	—	—	—	—	55	15·6	2·1	14·0
,, ,, recurrent	69	2·9	3·2	17·2	49	13·9	1·5	10·9
Quartan, primary and recurrent	1	0·0	0·0	9·0	—	—	—	—
Malignant tertian, primary	—	—	—	—	4	1·1	0·2	16·2
,, ,, recurrent	4	0·2	0·1	6·5	—	—	—	—
Total—Malaria	84	3·5	3·6	15·8	117	33·2	4·1	12·8
Pyrexia of unknown origin ..	18	0·8	0·3	6·5	11	3·1	0·4	11·6
Sandfly fever	—	—	—	—	64	18·1	1·3	7·3
Tuberculosis	39	1·6	8·5	79·4	3	0·9	1·2	149·7
Upper air passage infections	1,476	61·6	32·5	8·0	266	75·4	4·6	6·3
Venereal disease	357	14·9	59·5	60·8	89	25·2	15·5	63·6
Other diseases caused by infection	1,107	46·2	56·4	18·6	141	40·0	6·0	15·4
Total—All diseases caused by infection ..	3,675	153·5	176·9	17·6	857	242·9	43·4	18·5
All other diseases ..	2,872	119·9	169·1	21·5	583	165·2	31·8	19·9
Total—All diseases ..	6,547	273·3	346·0	19·3	1,440	408·2	75·2	19·1
Injuries—								
General injuries	150	6·3	7·5	18·1	36	10·2	2·2	22·2
Local injuries	1,585	66·1	92·5	21·3	263	74·5	14·1	19·5
Total—All injuries ..	1,735	72·4	99·9	21·0	299	84·8	16·2	19·8
Total—All disabilities ..	8,282	345·7	445·9	19·7	1,739	492·9	91·4	19·2

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Diseases caused by Infection.

Iraq. Average strength, 3,536.				India. Average strength. 1,963.				Total Force. Average strength, 32,985.			
No. of cases	Case incidence per 1,000 of strength.	Average.		No. of cases	Case incidence per 1,000 of strength.	Average.		No. of cases.	Case incidence per 1,000 of strength.	Average.	
		No. sick daily.	Duration of case.			No. sick daily	Duration of case.			No. sick daily	Duration of case.
			Days.				Days.				Days.
35	9·9	1·7	17·7	3	1·5	0·2	22·0	40	1·2	2·0	18·0
3	0·8	0·1	13·0	1	0·5	0·0	15·0	6	0·2	0·2	12·2
23	6·5	1·9	29·6	12	6·1	0·6	17·4	44	1·3	2·9	24·4
1	0·3	0·0	9·0	—	—	—	—	1	0·0	0·0	9·0
26	7·4	5·2	73·3	12	6·1	1·1	32·2	56	1·7	9·2	60·1
5	1·4	2·1	156·8	3	1·5	0·4	52·0	25	0·8	5·2	76·2
93	26·3	11·1	43·4	31	15·8	2·3	26·9	172	5·2	19·6	41·6
19	5·4	5·7	108·8	1	0·5	0·3	126·0	39	1·2	9·0	84·4
4	1·1	1·5	138·8	1	0·5	0·3	94·0	8	0·2	2·2	100·9
92	26·0	2·3	9·2	58	29·5	1·5	9·2	351	10·6	8·4	8·8
126	35·6	2·9	8·5	16	8·2	0·4	8·4	631	19·1	15·5	9·0
31	8·8	0·7	8·2	49	25·0	0·9	6·8	85	2·6	1·8	7·6
26	7·4	0·5	7·1	24	12·2	0·5	6·9	64	1·9	1·5	8·3
258	73·0	6·5	9·2	243	123·8	5·0	7·6	556	16·9	13·7	9·0
327	92·5	7·8	8·7	244	124·3	4·8	7·1	689	20·9	17·3	9·1
—	—	—	—	3	1·5	0·0	5·7	4	0·1	0·1	6·5
19	5·4	1·1	20·6	48	24·5	1·2	9·1	71	2·2	2·4	12·6
1	0·3	0·0	8·0	37	18·8	0·8	8·2	42	1·3	0·9	8·0
662	187·2	16·6	9·2	648	330·1	13·3	7·5	1,511	45·8	37·6	9·1
4	1·1	0·1	7·2	—	—	—	—	33	1·0	0·8	8·3
549	155·3	12·1	8·1	90	45·8	1·9	7·6	703	21·3	15·3	7·9
3	0·8	1·7	201·3	2	1·0	1·5	280·0	47	1·4	12·9	100·2
199	56·3	5·2	9·6	89	45·3	1·8	7·5	2,030	61·5	44·1	7·9
89	25·2	12·4	50·9	30	15·3	3·9	47·4	565	17·1	91·3	59·0
272	76·9	15·6	20·9	69	35·2	3·5	18·4	1,589	48·2	81·4	18·7
2,112	597·3	87·2	15·1	1,035	527·3	30·6	10·8	7,679	232·8	338·1	16·1
783	221·4	53·7	25·0	357	181·9	17·9	18·3	4,595	139·3	272·3	21·6
2,895	818·7	140·9	17·8	1,392	709·1	48·4	12·7	12,274	372·1	610·5	18·2
39	11·0	2·4	22·8	22	11·2	0·7	11·8	247	7·5	12·8	18·9
331	93·6	16·3	18·0	113	57·6	6·2	20·0	2,292	69·5	129·0	20·5
370	104·6	18·7	18·5	135	68·8	6·9	18·7	2,539	77·0	141·8	20·4
3,265	923·4	159·6	17·8	1,527	777·9	55·3	13·2	14,813	449·1	752·3	18·5

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TABLE VIII.—SICKNESS IN DIFFERENT TYPES OF UNIT.

Type of Unit.	——	Home.					Abroad.					Total.				
		Incidence per 1,000 of strength.				Average duration of case. (days.)	Incidence per 1,000 of strength.				Average duration of case. (days.)	Incidence per 1,000 of strength.				Average duration of case. (days.)
		Cases.	Deaths.	Invalided out of service.	No. sick daily.		Cases.	Deaths.	Invalided out of service.	No. sick daily.		Cases.	Deaths.	Invalided out of service.	No. sick daily.	
Flying units ..	Disease	187·6	1·1	5·1	10·3	20·1	601·1	2·4	2·9	29·8	18·1	283·6	1·4	4·6	14·8	19·1
	Injury	70·0	3·5	0·7	4·0	21·0	101·4	12·0	0·3	5·6	20·3	77·3	5·5	0·6	4·4	20·8
	Total	257·6	4·6	5·8	14·3	20·4	702·5	14·4	3·2	35·4	18·4	360·9	6·9	5·2	19·2	19·5
Depôts (store and repair), ground schools and armoured car companies	Disease	392·6	1·0	8·7	19·7	18·3	612·5	0·8	3·9	26·8	16·0	461·5	1·0	7·2	21·9	17·3
	Injury	89·5	1·8	0·8	5·2	21·3	80·5	1·7	—	3·7	16·9	86·7	1·8	0·5	4·8	20·0
	Total	482·1	2·8	9·5	24·9	18·9	693·0	2·5	3·9	30·5	16·1	548·2	2·8	7·7	26·7	17·8
Miscellaneous units, Headquarters, personnel depôts, etc.	Disease	309·1	0·5	17·9	17·1	20·2	754·9	3·0	0·6	33·6	16·2	449·3	1·3	12·4	22·3	18·1
	Injury	44·4	—	0·3	2·4	19·8	79·7	1·8	—	4·3	19·9	55·5	0·6	0·2	3·0	19·8
	Total	353·5	0·5	18·2	19·5	20·2	834·6	4·8	0·6	37·9	16·6	504·8	1·9	12·6	25·3	18·3
Total	Disease	273·3	1·0	8·2	14·4	19·3	634·5	1·9	2·9	29·3	16·9	372·1	1·2	6·8	18·5	18·2
	Injury	72·4	2·4	0·7	4·2	21·0	89·1	6·0	0·1	4·7	19·0	77·0	3·4	0·5	4·3	20·4
	Total	345·7	3·4	8·9	18·6	19·7	723·6	7·9	3·0	34·0	17·1	449·1	4·6	7·3	22·8	18·5

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TABLE IX.—INCIDENCE OF CERTAIN DISEASES IN THE VARIOUS TRADE GROUPS.

Trade Group.	Incidence per 1,000 of strength.								
	Influenza	Upper air passage infections.	Venereal diseases.	Respiratory diseases.	Digestive diseases.	All other diseases.	All diseases.	All injuries.	All disabilities
Aircrafthands	22·2	71·2	25·8	16·2	38·4	216·0	389·8	70·7	460·5
Aircraft apprentices ..	6·6	95·9	—	7·3	35·4	177·2	322·3	48·6	370·9
Carpenters and riggers ..	12·5	52·4	20·0	11·8	29·9	217·0	343·6	82·6	426·2
Clerks	24·6	59·6	18·1	11·1	36·9	245·5	395·8	58·7	454·5
Drivers	22·3	50·7	24·2	16·5	33·8	287·9	435·4	88·0	523·4
Fitters	16·3	52·8	15·8	8·3	33·5	250·3	377·0	103·8	488·8
Metal workers	19·9	49·6	16·2	10·2	38·6	217·7	352·2	78·8	431·0
Officers, cadets and airman pilots	26·6	55·3	1·9	8·0	37·6	183·4	312·9	98·8	411·7
Other skilled trades.. ..	17·8	56·4	23·6	16·1	39·7	252·1	405·6	61·9	467·5
Total force	19·1	61·5	17·1	12·1	36·2	226·0	372·1	77·0	449·1

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TABLE X.—INJURIES.

—	Number of cases.							
	Airscrews.	Athletics.	Flying.	Motor transport.	Starting motor engines.	Other causes.	Total.	Percentage of total cases.
On duty	29	812	179	73	40	391	1,524	60
Off duty	—	143	—	420	6	386	955	38
Not stated	—	10	—	—	1	27	38	2
Total	29	965	179	493	47	804	2,517	100
Nature of injury :								
General	2	9	100	78	—	36	225	9
Head and face ..	4	74	46	156	3	140	423	17
Trunk	—	59	6	17	—	57	139	5
Upper extremity .	13	142	12	98	39	219	523	21
Lower extremity .	10	681	15	144	5	352	1,207	48
Total	29	965	179	493	47	804	2,517	100
Deaths :								
On duty	2	—	78	1	—	2	83	78
Off duty	—	1	—	14	—	9	24	22
Total	2	1	78	15	—	11	107	100

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TABLE XI.—FLYING CASUALTIES ON DUTY.

Rank.	1924.	1925.	1926.
Officers.			
Killed	*46*	*41*	47
Injured	*64*	*58*	55
Cadets.			
Killed	*1*	—	2
Injured	*1*	*1*	5
Airmen.			
Killed	*22*	*13*	29
Injured	*35*	*42*	41
Total casualties.			
Killed	*69*	*54*	78
Injured	*100*	*101*	101
Total	*169*	*155*	179
Deaths as percentage of total flying casualties	*41*	*35*	44
Average duration of each case (days) :—			
Deaths included	*21*	*29*	27
Deaths excluded	*37*	*45*	48

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TABLE XII.—NOSOLOGICAL TABLE FOR HOME, ABROAD, AND TOTAL FORCE, 1926.

Disease.	Home. Average strength, 23,958.						Abroad. Average strength, 9,027.							Total Force. Average strength, 32,985.					
	No. of cases.	No. of deaths.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages.		No. of cases.	No. of deaths.	No. invalided to United Kingdom.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages.		No. of cases.	No. of deaths.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages.	
					No. sick daily.	Duration of case.						No. sick daily.	Duration of case.					No. sick daily.	Duration of case.
Diseases caused by infection.						Days.							Days.						Days.
Diphtheria	6	—	—	0·3	0·4	27·0	9	—	1	—	1·0	1·4	55·3	15	—	—	0·5	1·8	44·0
*Dysentery	15	—	—	0·6	1·4	33·2	157	1	18	—	17·4	18·2	42·4	172	1	—	5·2	19·6	41·6
*Enteric group	3	—	—	0·1	0·4	54·3	44	3	6	—	4·9	10·8	89·5	47	3	—	1·4	11·2	87·2
*Enteritis (acute) and gastro-enteritis (acute)	104	—	—	4·3	2·6	9·0	247	—	—	—	27·4	5·9	8·7	351	—	—	10·6	8·4	8·8
*Influenza (including influenzal pneumonia) ..	472	—	—	19·7	11·8	9·1	159	—	—	—	17·6	3·7	8·5	631	—	—	19·1	15·5	9·0
Leishmaniasis, tropical sore	4	—	—	0·2	0·8	74·5	17	—	—	—	1·9	1·2	25·5	21	—	—	0·6	2·0	34·9
*Malaria	84	—	1	3·5	3·6	15·8	1,427	3	4	—	158·1	34·0	8·7	1,511	3	1	45·8	37·6	9·1
Measles	29	—	—	1·2	1·5	19·3	1	—	—	—	0·1	0·1	20·0	30	—	—	0·9	1·6	19·3
Mumps	41	—	—	1·7	2·5	22·0	3	—	—	—	0·3	0·2	19·7	44	—	—	1·3	2·6	21·8
Pneumonia	39	5	—	1·6	4·1	38·1	24	1	·2	—	2·7	2·3	35·0	63	6	—	1·9	6·4	36·9
*Pyrexia of unknown origin	18	—	—	0·8	0·3	6·5	15	—	1	—	1·7	0·4	10·4	33	—	—	1·0	0·8	8·3
Rheumatism (acute) ..	30	—	2	1·3	4·2	50·7	6	—	4	—	0·7	1·9	118·2	36	—	2	1·1	6·1	61·9
Rubella	253	—	—	10·6	9·1	13·2	2	—	—	—	0·2	0·1	17·5	255	—	—	7·7	9·2	13·2
*Sandfly fever	—	—	—	—	—	—	703	—	—	—	77·9	15·3	7·9	703	—	—	21·3	15·3	7·9
Scarlet fever	75	—	—	3·1	7·9	38·6	2	—	—	—	0·2	0·2	39·0	77	—	—	2·3	8·2	38·6
Smallpox	—	—	—	—	—	—	1	—	—	—	0·1	0·1	20·0	1	—	—	0·0	0·1	20·0
Tuberculosis.																			
Respiratory	28	5	19	1·2	5·1	66·6	8	1	8	3	0·9	4·4	201·6	36	6	22	1·1	9·5	96·6
Other	11	—	6	0·5	3·4	112·2	—	—	—	—	—	—	—	11	—	6	0·3	3·4	112·2
*TOTAL—TUBERCULOSIS	39	5	25	1·6	8·5	79·4	8	1	8	3	0·9	4·4	201·6	47	6	28	1·4	12·9	100·2

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Acute upper air passage infections.																			
Laryngitis	26	—	—	7·1	0·6	8·4	8	—	—	—	0·9	0·2	7·0	34	—	—	1·0	0·8	8·1
Pharyngitis and naso-pharyngitis	978	—	—	40·8	19·6	7·3	258	—	—	—	28·6	4·2	5·9	1,236	—	—	37·5	23·8	7·0
Rhinitis, acute catarrhal	31	—	—	1·3	0·5	6·0	10	—	—	—	1·1	0·3	10·4	41	—	—	1·2	0·8	7·1
Tonsillitis (including quinsy and Vincent's Angina)	441	—	—	18·4	11·8	9·8	278	—	1	—	30·8	7·0	9·2	719	—	—	21·8	18·8	9·6
*TOTAL—UPPER AIR PASSAGE INFECTIONS ..	1,476	—	—	61·6	32·5	8·0	554	—	1	—	61·4	11·6	7·7	2,030	—	—	61·5	44·1	7·9
Vaccinia	39	—	—	1·6	0·8	7·3	3	—	—	—	0·3	0·0	4·0	42	—	—	1·3	0·8	7·1
Venereal disease.																			
Gonorrhœa	308	—	—	12·9	54·0	64·0	147	—	2	—	16·3	25·3	62·7	455	—	—	13·8	79·3	63·6
Syphilis	37	—	—	1·5	4·3	42·5	29	—	—	—	3·2	2·9	36·0	66	—	—	2·0	7·2	39·7
Soft chancre	12	—	—	0·5	1·1	34·0	32	—	—	—	3·5	3·7	42·4	44	—	—	1·3	4·8	40·0
*TOTAL—VENEREAL DISEASES	357	—	—	14·9	59·5	60·8	208	—	2	—	23·0	31·8	55·9	565	—	—	17·1	91·3	59·0
Abscess, hand and finger	58	—	—	2·4	1·8	11·2	38	—	—	—	4·2	1·6	15·4	96	—	—	2·9	3·4	12·9
Abscess, other	102	—	—	4·3	3·8	13·4	23	—	1	—	2·5	2·4	37·9	125	—	—	3·8	6·1	17·9
Boils	94	—	—	3·9	2·6	10·0	77	—	1	—	8·5	3·3	15·6	171	—	—	5·2	5·9	12·5
Carbuncles	19	—	—	0·8	0·7	13·9	7	—	1	—	0·8	0·6	29·0	26	—	—	0·8	1·3	18·0
Cellulitis	234	—	—	9·8	8·3	13·0	224	—	—	—	24·8	7·3	11·8	458	—	—	13·9	15·6	12·4
Lymphadenitis and lymphangitis	47	—	1	2·0	2·4	18·7	25	—	—	—	2·8	0·9	13·5	72	—	1	2·2	3·3	16·9
Osteo-myelitis, periostitis and osteitis	14	—	3	0·6	3·1	81·3	2	—	1	—	0·2	0·8	142·0	16	—	3	0·5	3·9	88·9
Pyæmia, septicæmia ..	—	—	—	—	—	—	1	2	—	—	0·1	0·1	20·0	1	2	—	0·0	0·1	20·0
Ulcer	6	—	—	0·3	0·3	19·2	8	—	—	—	0·9	0·4	19·4	14	—	—	0·4	0·7	19·3
Other diseases caused by infection	17	1	1	0·7	2·1	44·4	9	1	—	—	1·0	0·3	12·2	26	2	1	0·8	2·4	33·2
*TOTAL—DISEASES CAUSED BY INFECTION ..	3,675	11	33	153·5	176·9	1·76	4,004	12	51	3	443·6	161·2	14·7	7,679	23	36	232·8	338·1	16·1

* Analysed in further detail in Table VII.

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TABLE XII.—NOSOLOGICAL TABLE FOR HOME, ABROAD, AND TOTAL FORCE, 1926.—*continued*

Disease.	Home. Average strength, 23,958.						Abroad. Average strength, 9,027.							Total Force. Average strength, 32,985.					
	No. of cases.	No. of deaths.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages.		No. of cases.	No. of deaths.	No. invalided to United Kingdom.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages.		No. of cases.	No. of deaths.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages.	
					No. sick daily.	Duration of case.						No. sick daily.	Duration of case.					No. sick daily.	Duration of case.
						Days.							Days.						Days.
Contacts and carriers ..	32	—	—	1·3	0·8	8·6	6	—	—	—	0·7	0·3	15·7	38	—	—	1·2	1·0	9·7
Effects of parasites ..	13	—	—	0·5	0·7	18·5	25	—	1	—	2·8	1·3	19·2	38	—	—	1·2	2·0	18·9
Other diseases classified by systems. *Diseases of nervous system and brain.*																			
Neuritis	21	—	—	0·9	1·8	31·1	21	—	2	—	2·3	2·9	49·6	42	—	—	1·3	4·6	40·3
Nerve paralysis	6	—	1	0·3	0·6	38·0	—	—	—	—	—	—	—	6	—	1	0·2	0·6	38·0
Epilepsy (including observation cases)	14	—	7	0·6	1·5	37·9	6	—	4	2	0·7	1·2	73·7	20	—	9	0·6	2·7	48·6
Psychoneurosis	73	—	29	3·0	7·7	38·6	60	—	15	1	6·6	7·4	45·3	133	—	30	4·0	15·2	41·6
Mental diseases (including observation cases) ..	11	—	7	0·5	2·6	85·3	5	—	4	5	0·6	2·5	179·6	16	—	12	0·5	5·0	114·8
Other diseases of nervous system	15	2	2	0·6	1·8	42·7	14	—	2	—	1·6	1·6	40·5	29	2	2	0·9	3·3	41·6
TOTAL—DISEASES OF NERVOUS SYSTEM AND BRAIN	140	2	46	5·9	15·9	41·4	106	—	27	8	11·7	15·5	53·4	246	2	54	7·5	31·4	46·6

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Diseases of the Eye.																		
Infectious	59	—	3	2·5	3·3	20·3	28	—	4	—	3·1	1·5	19·8	87	—	3	2·6	4·8	20·1
Other diseases of the eye	48	—	26	2·0	2·7	20·6	18	—	8	1	2·0	2·1	42·1	66	—	27	2·0	4·8	26·5
TOTAL—DISEASES OF THE EYE	107	—	29	4·5	6·0	20·4	46	—	12	1	5·1	3·6	28·6	153	—	30	4·6	9·6	22·9
Diseases of ear and nose.																			
Otitis media; acute ..	13	—	1	0·5	1·0	28·2	18	—	—	1	2·0	1·0	20·8	31	—	2	0·9	2·0	23·9
Otitis media, chronic ..	44	—	24	1·8	1·9	16·2	24	—	5	8	2·7	3·2	49·2	68	—	32	2·1	5·2	27·8
Other diseases of ear and nose	90	—	1	3·8	5·4	21·8	75	—	2	—	8·3	3·6	17·5	165	—	1	5·0	9·0	19·8
TOTAL—DISEASES OF EAR AND NOSE	147	—	26	6·1	8·3	20·7	117	—	7	9	13·0	7·9	24·5	264	—	35	8·0	16·2	22·4
Diseases of the circulatory system.																			
Endocarditis, acute ..	1	—	—	0·0	0·1	54·0	1	—	1	1	0·1	0·8	292·0	2	—	1	0·1	0·9	173·0
Valvular disease of the heart	14	1	10	0·6	3·3	85·9	3	—	1	2	0·3	0·8	96·0	17	1	12	0·5	4·1	87·6
Disease of myocardium ..	4	—	—	0·2	0·3	30·0	—	—	—	—	—	—	—	4	—	—	0·1	0·3	30·0
Disordered action of the heart	38	—	2	1·6	1·9	18·5	39	—	1	—	4·3	1·9	18·1	77	—	2	2·3	3·9	18·3
Varix	24	—	1	1·0	2·0	29·9	10	—	—	—	1·1	0·9	32·4	34	—	1	1·0	2·9	30·6
Other diseases of the circulatory system ..	17	2	1	0·7	1·8	39·7	18	1	2	—	2·0	2·0	41·4	35	3	1	1·1	3·9	40·6
TOTAL—DISEASES OF THE CIRCULATORY SYSTEM	98	3	14	4·1	9·5	35·4	71	1	5	3	7·9	6·4	33·2	169	4	17	5·1	16·0	34·5
Diseases of lymphatic system and ductless glands	10	—	1	0·4	1·3	48·1	1	—	—	—	0·1	0·1	24·0	11	—	1	0·3	1·4	45·9

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TABLE XII.—NOSOLOGICAL TABLE FOR HOME, ABROAD, AND TOTAL FORCE, 1926.—*continued.*

Disease.	Home. Average strength, 23,958.						Abroad. Average strength, 9,027.							Total Force. Average strength, 32,985.					
	No. of cases.	No. of deaths.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages.		No. of cases.	No. of deaths.	No. invalided to United Kingdom.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages.		No. of cases.	No. of deaths.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages.	
					No. sick daily.	Duration of case.						No. sick daily.	Duration of case.					No. sick daily.	Duration of case.
						Days.							Days.						Days.
Diseases of the Respiratory system. (*a*)																			
Bronchitis	82	—	3	3·4	6·5	28·9	41	—	—	—	4·5	1·5	14·0	123	—	3	3·7	8·0	23·8
Tracheitis	142	—	—	5·9	3·0	7·6	57	—	—	—	6·3	1·0	6·7	199	—	—	6·0	4·0	7·4
Asthma	6	—	1	0·3	0·3	15·3	4	—	—	—	0·4	0·1	12·5	10	—	1	0·3	0·4	14·2
Pleurisy	32	—	1	1·3	2·7	31·1	22	—	—	—	2·4	1·5	25·4	54	—	1	1·6	4·3	28·7
Other diseases of the respiratory system ..	9	—	3	0·4	1·0	41·9	4	—	4	—	0·4	1·1	104·8	13	—	3	0·4	2·2	61·2
TOTAL—DISEASES OF THE RESPIRATORY SYSTEM	271	—	8	11·3	13·5	18·1	128	—	4	—	14·2	5·4	15·4	399	—	8	12·1	18·9	17·3
Disease of teeth and gums	67	—	2	2·8	1·7	9·4	28	—	—	—	3·1	0·7	9·5	95	—	2	2·9	2·5	9·4
Diseases of the Digestive System (excluding tonsillitis).																			
Hypertrophy of tonsils ..	73	—	—	3·0	4·3	21·3	25	—	—	—	2·8	1·2	17·4	98	—	—	3·0	5·5	20·3
Gastritis, acute	14	—	—	0·6	1·2	30·9	8	—	—	—	0·9	0·5	20·6	22	—	—	0·7	1·6	27·1
Gastritis, chronic ..	4	—	2	0·2	0·9	79·2	5	—	2	—	0·6	0·8	61·6	9	—	2	0·3	1·7	69·4

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Dyspepsia	135	—	—	5·6	3·1	8·3	59	—	—	—	6·5	1·2	7·4	194	—	—	5·9	4·3	8·0
Appendicitis	190	1	1	7·9	15·0	28·8	57	2	1	—	6·3	6·4	41·3	247	3	1	7·5	21·5	31·7
Hernia	67	—	2	2·8	6·3	34·2	19	—	1	—	2·1	2·0	37·7	86	—	2	2·6	8·2	35·0
Constipation	65	—	—	2·7	1·9	10·8	88	—	—	—	9·7	1·7	7·0	153	—	—	4·6	3·6	8·6
Colic	22	—	—	0·9	0·5	8·5	16	—	—	—	1·8	0·4	8·9	38	—	—	1·2	0·9	8·7
Hæmorrhoids	74	—	—	3·1	4·4	21·6	33	—	—	—	3·7	1·6	18·2	107	—	—	3·2	6·0	20·6
Jaundice	31	—	—	1·3	1·7	19·8	60	—	3	—	6·6	3·5	21·3	91	—	—	2·8	5·2	20·8
Other diseases of the digestive system	75	3	3	3·1	7·4	36·0	75	1	5	—	8·3	5·3	25·9	150	4	3	4·5	12·7	30·9
TOTAL—DISEASES OF THE DIGESTIVE SYSTEM ..	750	4	8	31·3	46·6	22·7	445	3	12	—	49·3	24·6	20·2	1,195	7	8	36·2	71·2	21·8
Diseases due to disorders of nutrition or metabolism	6	1	1	0·3	0·3	16·3	4	—	—	—	0·4	0·3	25·0	10	1	1	0·3	0·5	19·8
Diseases of the Generative System.																			
Phimosis	27	—	—	1·1	1·4	18·4	32	—	—	—	3·5	1·6	18·5	59	—	—	1·8	3·0	18·5
Balanitis	10	—	—	0·4	0·2	8·1	10	—	—	—	1·1	0·5	19·4	20	—	—	0·6	0·8	13·8
Urethritis	79	—	—	3·3	5·8	27·0	76	—	—	—	8·4	5·1	24·4	155	—	—	4·7	10·9	25·7
Varicocele	12	—	—	0·5	1·2	35·0	7	—	—	—	0·8	0·6	30·0	19	—	—	0·6	1·7	33·2
Hydrocele	1	—	—	0·0	0·1	36·0	1	—	—	—	0·1	0·1	19·0	2	—	—	0·1	0·2	27·5
Epididimitis; acute ..	3	—	—	0·1	0·2	29·0	4	—	—	—	0·4	0·5	41·8	7	—	—	0·2	0·7	36·3
Other diseases of the generative system	29	—	—	1·2	1·3	16·3	20	—	—	—	2·2	0·6	10·8	49	—	—	1·5	1·9	14·1
TOTAL—DISEASES OF THE GENERATIVE SYSTEM	161	—	—	6·7	10·2	23·2	150	—	—	—	16·6	8·9	21·7	311	—	—	9·4	19·1	22·4

(*a*) Excluding pneumonia and tuberculosis.

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TABLE XII.—NOSOLOGICAL TABLE FOR HOME, ABROAD, AND TOTAL FORCE, 1926.—*continued*.

Disease.	Home. Average strength, 23,958.						Abroad. Average strength, 9,027.							Total Force. Average strength, 32,985.					
	No. of cases.	No. of deaths.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages.		No. of cases.	No. of deaths.	No. invalided to United Kingdom.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages.		No. of cases.	No. of deaths.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages.	
					No. sick daily.	Duration of case.						No. sick daily.	Duration of case.					No. sick daily.	Duration of case.
						Days.							Days.						Days.
Diseases of Organs of Locomotion.																			
Diseases of the bone ..	13	—	2	0·5	1·2	34·9	4	—	1	—	0·4	0·8	68·5	17	—	2	0·5	2·0	42·8
Diseases of the joints ..	74	—	4	3·1	4·8	23·9	38	—	5	1	4·2	3·6	34·4	112	—	5	3·4	8·4	27·5
Myalgia and lumbago ..	94	—	—	3·9	2·8	11·1	79	—	—	—	8·8	1·7	8·0	173	—	—	5·2	4·6	9·7
Diseases of muscles, tendons and bursæ ..	52	—	2	2·2	2·7	19·0	26	—	—	—	2·9	0·9	12·2	78	—	2	2·4	3·6	16·7
Deformities of limbs ..	46	—	14	1·9	3·4	26·7	14	—	—	1	1·6	2·1	53·5	60	—	15	1·8	5·4	33·0
TOTAL—DISEASES OF ORGANS OF LOCOMOTION	279	—	22	11·6	15·0	19·6	161	—	6	2	17·8	9·0	20·4	440	—	24	13·3	24·0	19·9
Diseases of Areolar Tissue or Skin.																			
Impetigo	209	—	—	8·7	9·5	16·5	100	—	—	—	11·1	3·8	13·9	309	—	—	9·4	13·3	15·7
Scabies	89	—	—	3·7	2·5	10·3	16	—	—	—	1·8	0·3	7·8	105	—	—	3·2	2·8	9·9
Dermatitis	25	—	—	1·0	1·0	14·9	19	—	—	—	2·1	0·7	13·4	44	—	—	1·3	1·7	14·3
Urticaria	15	—	—	0·6	0·4	10·8	11	—	—	—	1·2	0·2	7·8	26	—	—	0·8	0·7	9·5
Eczema	25	—	—	1·0	2·0	29·5	13	—	—	—	1·4	0·7	20·9	38	—	—	1·2	2·8	26·6
Herpes	28	—	—	1·2	0·7	8·7	13	—	—	—	1·4	0·3	8·2	41	—	—	1·2	1·0	8·5
Psoriasis	25	—	—	1·0	2·3	33·3	7	—	2	—	0·8	1·1	59·0	32	—	—	1·0	3·4	38·9
Tineacruris	30	—	—	1·3	1·3	15·3	6	—	—	—	0·7	0·2	12·8	36	—	—	1·1	1·5	14·9

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Ingrowing toe-nail ..	67	—	—	2·8	3·3	17·9	34	—	—	—	3·8	2·0	21·6	101	—	—	3·1	5·3	19·1
Other diseases of the skin	82	—	2	3·4	6·0	26·8	35	—	—	—	3·9	2·1	22·1	117	—	2	3·5	8·1	25·4
TOTAL—DISEASES OF AREOLAR TISSUE OR SKIN.	595	—	2	24·8	29·0	17·8	254	—	2	—	28·1	11·6	16·7	849	—	2	25·7	40·6	17·4
Diseases of Urinary Organs.																			
Nephritis	4	—	1	0·2	0·7	62·8	4	—	1	—	0·4	0·6	59·0	8	—	1	0·2	1·3	60·9
Pyelitis	4	—	1	0·2	0·8	74·5	5	—	—	—	0·6	0·4	31·2	9	—	1	0·3	1·2	50·4
Inflammation synonym-cystitis	4	—	—	0·2	0·2	22·0	8	—	—	—	0·9	0·4	16·4	12	—	—	0·4	0·6	18·2
Incontinence of urine ..	3	—	2	0·1	0·3	33·3	1	—	—	—	0·1	0·0	12·0	4	—	2	0·1	0·3	28·0
Albuminuria	8	—	—	0·3	0·3	14·2	2	—	—	—	0·2	0·0	3·5	10	—	—	0·3	0·3	12·1
Other diseases of urinary organs	16	—	—	0·7	1·2	27·6	19	—	—	—	2·1	1·0	19·7	35	—	—	1·1	2·2	23·3
TOTAL—DISEASES OF URINARY ORGANS ..	39	—	4	1·6	3·5	33·2	39	—	1	—	4·3	2·5	23·5	78	—	4	2·4	6·1	28·3
Tumours and Cysts																			
Tumours non-malignant	20	—	—	0·8	1·7	30·6	6	—	—	—	0·7	0·5	29·2	26	—	—	0·8	2·2	30·3
Tumours, malignant ..	3	2	1	0·1	0·5	60·0	—	—	—	—	—	—	—	3	2	1	0·1	0·5	60·0
Cysts	45	—	—	1·9	1·8	14·3	17	—	—	—	1·9	0·6	12·1	62	—	—	1·9	2·3	13·7
TOTAL—TUMOURS AND CYSTS	68	2	1	2·8	3·9	21·1	23	—	—	—	2·5	1·0	16·6	91	2	1	2·8	5·0	20·0
Poisons.																			
Effects of alcohol ..	—	—	—	—	—	—	1	—	—	—	0·1	0·0	13·0	1	—	—	0·0	0·0	13·0
Other poisons	10	1	—	0·4	0·2	8·9	53	1	—	—	5·9	1·9	12·8	63	2	—	1·9	2·1	12·2
TOTAL—POISONS ..	10	1	—	0·4	0·2	8·9	54	1	—	—	6·0	1·9	12·9	64	2	—	1·9	2·1	12·2
No appreciable disease ..	63	—	—	2·6	2·0	11·8	21	—	1	—	2·3	0·9	14·9	84	—	—	2·5	2·9	12·6
Debility	16	—	—	0·7	0·6	14·0	44	—	—	—	4·9	1·3	11·2	60	—	—	1·8	2·0	11·9
*TOTAL—ALL DISEASES	6,547	24	197	273·3	346·0	19·3	5,727	17	129	26	634·5	264·5	16·9	12,274	41	223	372·1	610·5	18·2

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TABLE XII.—NOSOLOGICAL TABLE FOR HOME, ABROAD, AND TOTAL FORCE. 1926.—*continued.*

Disease.	Home. Average strength, 23,958.						Abroad. Average strength, 9,027.							Total Force. Average strength, 32,985.					
	No. of cases.	No. of deaths.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages.		No. of cases.	No. of deaths.	No. invalided to United Kingdom.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages.		No. of cases.	No. of deaths.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages.	
					No. sick daily.	Duration of case.						No. sick daily.	Duration of case.					No. sick daily.	Duration of case.
						Days.							Days.						Days.
General Injuries.																			
Burns and scalds ..	6	1	—	0·3	0·2	11·8	12	3	—	—	1·3	1·0	30·8	18	4	—	0·5	1·2	24·4
Heatstroke, sunstroke, and heat exhaustion ..	3	—	—	0·1	0·1	9·0	19	5	1	—	2·1	0·9	16·5	22	5	—	0·7	0·9	15·5
Suffocation and strangulation	1	1	—	0·0	—	0·0	1	1	—	—	0·1	0·0	11·0	2	2	—	0·1	0·0	5·5
Drowning	—	—	—	—	—	—	4	4	—	—	0·4	—	0·0	4	4	—	0·1	—	0·0
Minor injuries	82	—	—	3·4	2·4	10·9	20	—	—	—	2·2	0·8	15·2	102	—	—	3·1	3·3	11·7
Multiple fractures ..	36	28	1	1·5	2·7	27·6	27	25	3	—	3·0	1·8	24·3	63	53	1	1·9	4·5	26·2
Multiple wounds ..	16	5	—	0·7	1·9	44·1	11	7	2	—	1·2	0·7	23·4	27	12	—	0·8	2·6	35·7
Other injuries	6	—	—	0·3	0·1	6·2	3	—	1	—	0·3	0·1	12·6	9	—	—	0·3	0·2	8·3
*TOTAL—GENERAL INJURIES	150	35	1	6·3	7·5	18·1	97	45	7	—	10·7	5·3	20·1	247	80	1	7·5	12·8	18·9
Local Injuries. (i) Head and Neck																			
Contusions and wounds..	115	—	—	4·8	3·7	11·9	40	—	1	—	4·4	1·4	12·6	155	—	—	4·7	5·1	12·1
Gunshot wounds.. ..	2	1	1	0·1	0·7	121·0	3	3	—	—	0·3	—	0·0	5	4	1	0·2	0·7	48·4
Burns and scalds ..	14	—	—	0·6	0·4	10·3	4	—	—	—	0·4	0·1	4·8	18	—	—	0·5	0·4	9·1
Fracture of skull ..	11	6	—	0·5	0·7	22·4	3	1	1	—	0·3	0·5	64·0	14	7	—	0·4	1·2	31·3
Concussion of brain ..	121	2	—	5·1	5·8	17·6	21	—	1	—	2·3	1·7	29·0	142	2	—	4·3	7·5	19·3
Other fractures	14	—	1	0·6	0·6	16·0	6	—	—	—	0·7	0·2	11·7	20	—	1	0·6	0·8	14·7
Other injuries	55	10	3	2·3	3·1	20·9	24	4	1	—	2·7	1·9	28·3	79	14	3	2·4	5·0	23·1
TOTAL—HEAD AND NECK	332	19	5	13·9	15·1	16·6	101	8	4	—	11·2	5·7	20·5	433	27	5	13·1	20·7	17·5

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(ii) Trunk :																			
Contusions and wounds..	57	1	—	2·4	1·3	8·3	39	—	—	—	4·3	1·4	13·1	96	1	—	2·9	2·7	10·2
Gunshot wounds.. ..	1	—	—	0·0	0·1	34·0	1	—	—	—	0·1	0·8	306·0	2	—	—	0·1	0·9	170·0
Fractures	11	2	—	0·5	0·6	18·4	5	1	—	—	0·6	0·2	13·0	16	3	—	0·5	0·7	16·7
Other injuries	11	—	—	0·5	0·5	15·1	4	—	—	—	0·4	0·1	5·2	15	—	—	0·5	0·5	12·5
TOTAL—TRUNK	80	3	—	3·3	2·4	10·9	49	1	—	—	5·4	2·5	18·4	129	4	—	3·9	4·9	13·8
(iii) Upper extremity :																			
Contusions and wounds..	123	—	2	5·1	5·3	15·7	69	—	1	1	7·6	3·4	17·8	192	—	3	5·8	8·6	16·4
Gunshot wounds.. ..	—	—	—	—	—	—	3	—	—	—	0·3	0·2	24·0	3	—	—	0·1	0·2	24·3
Burns and scalds ..	10	—	—	0·4	0·6	20·9	11	—	—	—	1·2	0·4	12·8	21	—	—	0·6	1·0	16·7
Fractures	148	—	3	6·2	15·0	37·1	54	—	1	—	6·0	5·3	35·7	202	—	3	6·1	20·3	36·7
Dislocations	35	—	—	1·5	2·1	22·3	11	—	—	—	1·2	0·9	30·8	46	—	—	1·4	3·1	24·4
Sprains	27	—	—	1·1	0·8	10·6	11	—	—	—	1·2	0·3	9·0	38	—	—	1·2	1·1	10·1
Other injuries	14	—	—	0·6	0·6	16·9	7	—	—	—	0·8	0·3	17·3	21	—	—	0·6	1·0	17·0
TOTAL—UPPER EXTREMITY	357	—	5	14·9	24·5	25·0	166	—	2	1	18·4	10·8	23·7	523	—	6	15·9	35·2	24·6
(iv) Total—Hand and Wrist	142	—	3	5·9	7·9	20·3	95	—	1	1	10·5	4·8	18·3	237	—	4	7·2	12·6	19·5
(v) Total—Rest of limb	215	—	2	9·0	16·6	28·1	71	—	1	—	7·9	6·0	30·9	286	—	2	8·7	22·6	28·8
(vi) Lower extremity :																			
Contusions and wounds..	224	—	—	9·3	8·0	13·0	125	—	1	—	13·8	4·3	12·7	349	—	—	10·6	12·3	12·9
Gunshot wounds.. ..	—	—	—	—	—	—	2	—	—	—	0·2	0·1	24·5	2	—	—	0·1	0·1	24·5
Burns and scalds ..	11	—	—	0·5	0·3	11·1	4	—	—	—	0·4	0·3	29·2	15	—	—	0·5	0·7	15·9
Fractures	91	1	5	3·8	22·3	89·6	36	—	3	—	4·0	4·8	48·5	127	1	5	3·9	27·1	78·0
Dislocations	2	—	—	0·1	0·4	79·0	—	—	—	—	—	0·0	0·0	2	—	—	0·1	0·5	82·5
Sprains	279	—	—	11·6	11·0	14·4	127	—	1	—	14·1	3·8	11·0	406	—	—	12·3	14·9	13·4
Other injuries	209	—	—	8·7	8·4	14·7	97	—	—	—	10·7	4·2	15·9	306	—	—	9·3	12·6	15·1
TOTAL—LOWER EXTREMITY	816	1	5	34·1	50·5	22·6	391	—	5	—	43·3	17·6	16·5	1,207	1	5	36·6	68·2	20·6

* Analysed in further detail in Table VII.

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TABLE XII.—NOSOLOGICAL TABLE FOR HOME, ABROAD, AND TOTAL FORCE, 1926.—*continued.*

Disease.	Home. Average strength, 23,958.						Abroad. Average strength, 9,027.							Total Force. Average strength, 32,985.					
	No. of cases.	No. of deaths.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages.		No. of cases.	No. of deaths.	No. invalided to United Kingdom.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages.		No. of cases.	No. of deaths.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages.	
					No. sick daily.	Duration of case.						No. sick daily.	Duration of case.					No. sick daily.	Duration of case.
						Days.							Days.						Days.
(vii) TOTAL—FOOT AND ANKLE	314	—	—	13·1	11·1	12·9	192	—	1	—	21·3	6·3	12·0	506	—	—	15·3	17·4	12·5
(viii) TOTAL—KNEE ..	275	—	—	11·5	13·2	17·5	101	—	1	—	11·2	5·1	18·3	376	—	—	11·4	18·3	17·7
(ix) TOTAL—REST OF LIMB..	227	—	5	9·5	26·3	42·2	98	—	3	—	10·9	6·3	23·3	325	—	5	9·9	32·5	36·5
*TOTAL—ALL LOCAL INJURIES	1,585	23	15	66·1	92·5	21·3	707	9	11	1	78·4	36·6	18·9	2,292	32	16	69·5	129·0	20·5
*TOTAL—ALL INJURIES ..	1,735	58	16	72·4	99·9	21·0	804	54	18	1	89·1	41·9	19·0	2,539	112	17	77·0	141·8	20·4
*TOTAL—ALL DISEASES ..	6,547	24	197	273·3	346·0	19·3	5,727	17	129	26	634·5	264·5	16·9	12,274	41	223	372·1	610·5	18·2
*TOTAL—ALL DISABILITIES	8,282	82	213	345·7	445·9	19·7	6,531	71	147	27	723·6	306·3	17·1	14,813	153	240	449·1	752·3	18·5

* Analysed in further detail in Table VII.

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CHART I-SICKNESS AT HOME 1926.
MONTHLY CASE INCIDENCE PER 1,000 OF STRENGTH.

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CHAPTER II.—THE HEALTH OF THE ROYAL AIR FORCE AT HOME DURING 1926.

General.

29. The average strength of the Royal Air Force at home during 1926 was 23,958 and the total number of cases of sickness was 14,974, a case incidence per 1,000 of strength of 625·1 compared with 774·1 in 1925 and an average of 857·5 for the years 1921–1924 inclusive. If cases of less than 48 hours' duration are excluded the incidence becomes 345·7 compared with 386·1 in 1925. The incidence of deaths shows a slight increase from 3·1 per 1,000 in 1925 to 3·4 in 1926. 213 cases were finally invalided out of the service during 1926 compared with 239 in 1925, representing a decrease in the incidence from 10·0 to 8·9 per 1,000. The number of sick daily shows very little change, 19·7 per 1,000 in 1926 compared with 19·1 in 1925 and an average of 20·5 over the previous four-yearly period.

30. Table XIII, page 32, analyses by age group the incidence of those diseases which were responsible for the bulk of medical non-effectiveness at home during 1926. The strength of officers does not justify their division into age groups and they are accordingly shown as one group. As in previous years the youngest age group shows the highest disability incidence.

The incidence of influenza was approximately the same for all ages with the exception of airmen under 18 who, contrary to what might be expected from their age and from a comparison with the figures of previous years, show the lowest incidence of all.

No cases of venereal disease occurred amongst airmen under eighteen. The incidence was lowest in the group 18 and 19 and, as in 1925, highest in the group 26 and 27.

Upper air passage infections were commonest among apprentices while the group over 40 showed the lowest incidence.

The incidence of diseases of the respiratory and digestive systems fluctuates through all the age groups and the figures call for no comment.

The incidence both of disease and injury shows, as would be expected, a tendency to decrease with increasing age.

31. Table XIV, page 33, analyses by stations the incidence of injury and of the same diseases as in table XIII, page 32. The stations selected for the purpose of this analysis are those which had an average strength of 500 or over during 1926. The highest sickness incidence was at Digby, with Halton second and Cranwell third—the three stations, though in a different order, which headed the corresponding table in 1925. At Halton and Cranwell

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these high figures are to be expected as it is at these two stations that aircraft apprentices were undergoing their training. As in previous years venereal disease was commonest at stations situated in the neighbourhood of large towns. Influenza varied from 3·9 per 1,000 of strength at Andover to 55·1 at Gosport. Sealand showed an incidence of diseases of the upper air passages of 11·7, while Digby and Halton showed 126·4 and 124·1 per 1,000 respectively. The lowest incidence 6·1, of respiratory diseases occurred at Eastchurch, and the highest, 39, at Calshot.

32. Chart I, facing page 29, shows the monthly case incidence of sickness per 1,000 of strength at home during 1926, 1925 and the average of the years 1921–24 inclusive. The sickness curves, with the exception of epidemics such as influenza in 1924, closely resemble each other each year. The highest peak is in January or February with a steady fall to July or August, and a second but lower peak in October or November.

Diseases Calling for Special Mention.

33. *Influenza.*—472 cases, compared with 1,080 in 1925, were reported at home. There were no deaths and the average duration of each case was 9·1 days.

34. *Bronchitis and tracheitis.*—In 1925 there were 205 cases of bronchitis and 52 of tracheitis with an average duration per case of 13·3 and 8·2 days respectively. In 1926 there were 82 cases of bronchitis with an average duration of 28·9 days and 142 cases of tracheitis with an average duration of 7·6 days. This reversal in incidence is due to a more discriminating use by medical officers of the term bronchitis.

35. *Malaria.*—84 cases were reported at home compared with 101 in 1925, a fall from 4·2 to 3·5 per 1,000. There were no cases of primary infection.

36. *Rubella.*—253 cases were reported compared with 87 in 1925. Of the total, 115 cases occurred at Cranwell and 98 at Halton almost entirely amongst apprentices. The remaining cases were distributed over 16 other stations.

37. *Scarlet fever.*—75 cases were reported during 1926 of which 44 occurred at Flower Down and 22 at Halton. At Flower Down the source of infection was considered to be the arrival from Halton of two airmen already infected, and at Halton the infection was thought from investigation to be due to food infection and is referred to again in chapter IV.

38. *Tinea cruris.*—30 cases were reported during the year of which 8 occurred at Cranwell, 8 at Halton and 6 at Uxbridge.

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39. *Impetigo.*—The incidence has been reduced from 10·3 in 1925 to 8·7 per 1,000 in 1926.

40. *Typhoid.*—Three cases of typhoid were reported compared with four in 1925. One case occurred at each of the following stations—Air Ministry, Manston and Shrewsbury. In no case was the source of infection discovered.

41. *No appreciable disease.*—With the exception of mental disease and epilepsy, all cases admitted to hospital for observation purposes in which no confirmation of disease was made have been shown under this heading.

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TABLE XIII.—INCIDENCE OF CERTAIN DISEASES AT HOME ANALYSED BY AGE GROUPS.

Age last birthday.	Average strength.	Case incidence per 1,000 of strength.								
		Influenza.	Upper air passage infections.	Venereal diseases.	Respiratory diseases.	Digestive diseases	All other diseases.	All diseases.	All injuries.	All disabilities.
Airmen—										
Under 18 ..	1,939	10·3	150·1	—	11·3	54·7	278·0	504·4	75·3	579·7
18 and 19 ..	3,156	19·0	84·9	2·5	7·9	27·9	156·2	298·5	88·7	387·2
20 and 21 ..	3,092	19·1	68·9	18·4	12·9	27·2	140·0	286·6	67·9	354·5
22 and 23 ..	3,828	20·9	56·9	22·7	11·0	27·9	111·5	251·0	67·4	318·5
24 and 25 ..	4,177	20·8	46·2	24·4	11·7	31·4	122·8	257·4	75·9	333·3
26 and 27 ..	1,791	22·3	41·3	28·5	14·5	27·4	113·9	247·9	70·9	318·8
28 and 29 ..	1,043	18·2	29·7	24·9	10·5	39·3	117·0	239·7	48·9	288·6
30 to 34 ..	1,509	15·2	26·5	10·6	9·9	32·5	81·5	176·3	43·1	219·4
35 to 39 ..	655	21·4	33·6	7·6	30·5	26·0	116·0	235·1	41·2	276·3
40 and over ..	366	21·9	24·6	8·2	19·1	30·1	103·8	207·6	49·2	256·8
Total airmen ..	21,556	19·0	63·0	16·5	11·9	31·7	137·7	279·8	69·6	349·4
Officers and cadets ..	2,402	25·8	48·7	0·8	5·8	27·9	105·7	214·8	98·3	313·1
Total at home..	23,958	19·7	61·6	14·9	11·3	31·3	134·5	273·3	72·4	345·7

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TABLE XIV.—SICKNESS AT PRINCIPAL STATIONS AT HOME.

Station.	Average strength.	Case incidence per 1,000 of strength.								
		Influenza.	Upper air passage infections.	Venereal diseases.	Respiratory diseases.	Digestive diseases.	All other diseases.	All diseases.	All injuries.	All disabilities.
Andover ..	510	3·9	94·1	15·7	19·6	27·4	64·7	225·5	78·4	303·9
Calshot ..	538	9·3	35·3	13·0	39·0	24·2	98·5	219·3	92·9	312·3
Cranwell ..	1,603	17·5	74·2	10·6	8·1	23·7	214·0	348·1	103·6	451·7
Digby ..	538	33·5	126·4	22·3	18·6	33·5	130·1	364·3	167·3	531·6
Duxford ..	523	13·4	21·0	22·9	11·5	21·0	124·3	214·1	76·5	290·6
Eastchurch ..	660	10·6	31·8	9·1	6·1	7·6	81·8	147·0	68·2	215·2
Farnborough ..	512	5·9	29·3	19·5	19·5	33·2	76·2	183·6	52·7	236·3
Flower Down ..	1,059	4·7	86·9	4·7	10·4	22·7	156·8	286·1	59·5	345·6
Gosport ..	563	55·1	26·6	16·0	10·6	19·5	62·2	190·0	40·9	230·9
Halton	3,336	6·0	124·1	7·8	11·7	51·0	215·8	416·4	76·1	492·5
Henlow.. ..	1,868	20·9	62·6	28·4	8·6	28·4	122·1	270·9	81·9	352·8
Kenley	522	32·6	78·5	11·5	15·3	36·4	90·1	264·4	82·4	346·8
Manston ..	1,563	27·5	74·9	17·3	9·6	26·9	134·4	290·5	51·2	341·7
Netheravon ..	717	16·7	41·8	9·8	5·6	34·9	65·6	174·4	76·7	251·1
Sealand ..	512	15·6	11·7	15·6	11·7	39·1	125·0	218·7	62·5	281·2
Shrewsbury ..	549	27·3	12·8	18·2	7·3	25·5	80·1	171·3	36·4	207·7
Uxbridge ..	1,676	10·1	42·4	16·1	9·0	40·6	184·3	302·5	35·2	337·7
All other stations	6,709	29·1	39·5	15·9	10·9	28·0	103·6	227·0	73·8	300·8
Total ..	23,958	19·7	61·6	14·9	11·3	31·3	134·5	273·3	72·4	345·7

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CHAPTER III.—THE HEALTH OF THE ROYAL AIR FORCE ABROAD DURING 1926.

General.

42. The incidence of sickness in the total force abroad and in each of the geographical areas abroad is shown in table I, page viii.

43. The average strength abroad during 1926 was 9,027 and the total number of cases of sickness was 11,448 representing an incidence of 1268·2 per 1,000 compared with 1230·8 in 1925 and an average over the previous four-yearly period of 1804·5. Excluding cases of less than 48 hours' duration the incidence becomes 723·6 as compared with 605·7 in 1925. The number of sick daily rose slightly in 1926 from 35·2 per 1000 in 1925 to 36·1. The average duration of each case and the average number of days sickness per head during 1926 approximated very closely to the corresponding figures in 1925.

44. Chart II, facing this page, shows the monthly incidence of sickness per 1000 of strength for the total force abroad during 1926, 1925 and the average of the years 1921—1924. The curve for 1926 closely follows that of 1925, with the exception of a peak in May and June which was largely due to a severe outbreak of malaria in Iraq to which further reference is made in chapter IV, and there is no recurrence of the abnormally high summer peak of previous years which has been shown in previous reports to have been due to a very large extent to sandfly fever.

45. The incidence of injury and of those diseases which were either peculiar to service abroad or responsible for the bulk of medical non-effectiveness is analysed by age groups in table XV, page 37.

As in the corresponding table for home, officers are shown as one group. The highest disease and injury incidence occurred in the age group 26 and 27, a group which also showed the highest incidence of malaria. Excluding those age groups in which the population was very small, i.e., 18 and 19, and over 35, dysentery and sandfly fever were most frequent in the group 20 and 21. As in previous years diseases of the respiratory system appear to attack the older groups of airmen most frequently.

46. Table XVI, page 38, gives an analysis of the incidence of dysentery, malaria and sandfly fever at each of the larger stations abroad. As in previous years the highest incidence of disease abroad occurred at Basrah where out of 730 cases of disease 508 were due to dysentery, malaria or sandfly fever. Compared with 1925 the combined incidence of dysentery, malaria and sandfly fever increased at all stations except Aboukir Abu Sueir Hinaidi and Malta during 1926.

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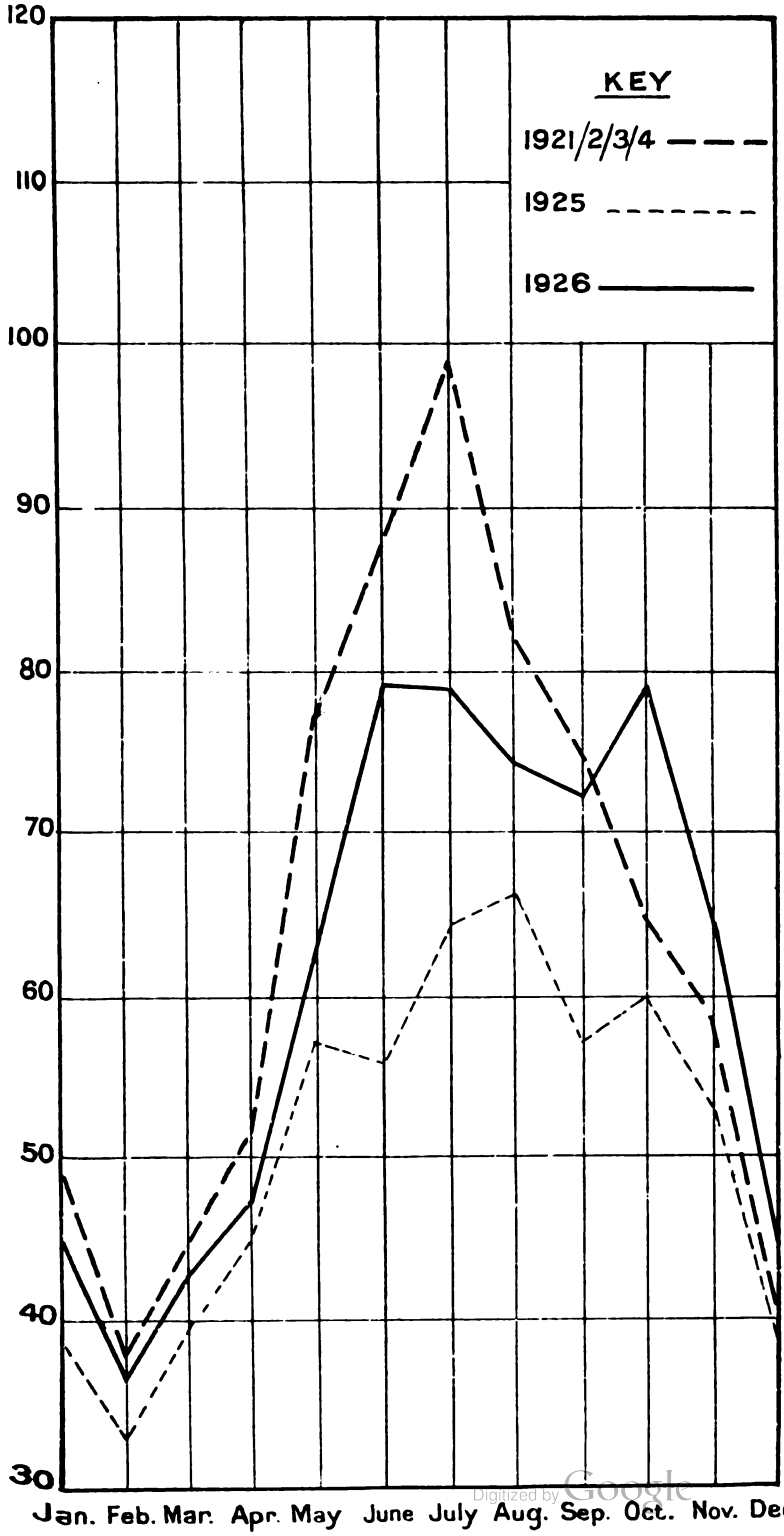
CHART II - SICKNESS ABROAD 1926.

MONTHLY CASE INCIDENCE PER 1,000 OF STRENGTH.



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Diseases Calling for Special Mention.

47. Tables XVII and XVIII, pages 39 and 40, show the incidence by station and monthly by geographical area respectively of dysentery, malaria and sandfly fever in the force abroad during 1926. Corresponding figures for 1925 and the average of the previous four-yearly period are included in the latter table for purposes of comparison.

48. *Dysentery.*—The cases are divided into clinical, bacillary and protozoal, the term clinical being given to those cases which present symptoms of dysentery but in which pathological examinations fail to determine the cause of infection. The total case incidence for the force abroad during 1926 has fallen from 23·8 in 1925 to 17·4 per 1000 in 1926 and the primary rate from 20·9 to 15·1 per 1,000.

In the Mediterranean Littoral there were 7 cases of primary bacillary and 16 of primary protozoal dysentery compared with 4 and 6 respectively in 1925. The commonest type of infection as in previous years was protozoal in origin.

In India 12 cases of primary bacillary and 12 cases of primary protozoal dysentery were reported compared with 1 and 9 respectively during 1925.

In Iraq there were 23 cases of primary bacillary compared with 26 primary protozoal. The corresponding figures in 1925 were 5 and 109. The highest incidence occurred at Baghdad, where dysentery accounted for 5·4 per cent. of all admissions due to disease at that station.

Both in 1925 and again in 1926 the small recurrence in clinical dysentery has been noticeable and was held in a previous report to suggest that most of the clinical cases of dysentery were of the bacillary type. The figures for bacillary and protozoal dysentery during 1926 appear to confirm this suggestion. The subject is dealt with at greater length in chapter IV under pathological work.

49. *Malaria.*—The total incidence abroad has risen from 99·3 in 1925 to 158·1 per 1,000 in 1926, while the primary rate has risen to 78·8 in 1926 compared with 40·5 in 1925. This increase in the incidence of malaria was almost entirely due to unusual outbreaks in India and Iraq which are commented on at greater length in chapter IV. The highest incidence was at Basrah and accounted for 65·7 per cent. of all admissions due to disease. Malaria is analysed in greater detail in table VII, page 12.

50. *Sandfly fever.*—The case incidence for the force abroad has risen slightly from 75·5 in 1925 to 77·9 per 1,000 in 1926. The highest incidence was reported at Mosul where sandfly fever constituted 24·4 per cent. of all admissions due to disease, and as in previous years reached its maximum in July.

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51. *Enteric group*—(i) *Typhoid fever.*—Thirty-six cases were reported during 1926 compared with 27 in 1925. Of the 36, 16 were from the Mediterranean Littoral (Egypt 14), 19 from Iraq and one from India. There were three deaths, one in Egypt, one in Iraq and one *en route* to United Kingdom from Iraq. The 14 cases which occurred in Egypt are commented on again in further detail in chapter IV.

(ii) *Paratyphoid A.*—Three cases compared with six in 1925 were reported, one each from India, Iraq and Egypt. Two of the cases were stated to have been fully inoculated but in the third case no information as to its state of protection was available. There were no deaths.

(iii) *Paratyphoid B.*—Five cases were recorded in 1926, three in Iraq and one in Egypt and Malta. Three cases were fully protected but no information as to inoculation was available in the remaining two. There were no deaths.

52. *Heatstroke and heat exhaustion.*—One case of heatstroke, five of heat hyperpyrexia and thirteen of heat exhaustion were reported from abroad and three from heat exhaustion at home during 1926. Of the cases abroad one occurred at Malta, 14 in Iraq and four in India. There were five deaths, all in Iraq, one from heatstroke and four from hyperpyrexia. The Principal Medical Officer in Iraq reported that " the cases in Iraq were closely investigated and enquiries gave no indication of any undue exposure or neglect in the observation of the stringent heat regulations. The actual shade temperature on July 2nd, the date when the first case was notified was 106° F. but a few days before it had risen rapidly to 114° F. The next cases occurred in almost epidemic form in August when the shade temperature rose rapidly to over 121° F. at Hinaidi and 125° F. at Baghdad. The humidity was rather lower on the average than in previous years. In most cases the damage appeared to have occurred when the shade temperature was rapidly rising although the individual may not have reported sick until the temperature was actually falling. Food poisoning epidemic, meningitis, cerebral and malaria, etc., were all excluded and treatment was very disappointing. In most cases control of the temperature was impossible and in spite of the most careful regulation ended in a collapse which was as alarming as the hyperpyrexia. Those of the fatal cases which were treated for many days showed symptoms indicative of toxæmia and it is possible that lavage of the large intestine with the manganates might be beneficial in these cases."

In addition to the 14 cases in Iraq which occurred amongst R.A.F. personnel, 17 cases amongst army and civilian personnel were reported resulting in four deaths.

53. *Smallpox.*—One case of a modified type occurred in India. Recovery was completed in three weeks.

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TABLE XV.—INCIDENCE OF CERTAIN DISEASES ABROAD, ANALYSED BY AGE GROUPS.

Age last birthday.	Average strength.	Case incidence per 1,000 of strength.										
		Dysentery.	Malaria.	Sandfly fever.	Upper air passage infections.	Venereal diseases.	Respiratory diseases.	Digestive diseases.	All other diseases.	All diseases.	All injuries.	Total disabilities.
Airmen—												
18 and 19	57	*	*	*	*	*	*	*	*	*	*	*
20 and 21	1,111	27·0	124·2	128·7	66·6	19·8	16·2	38·7	253·8	675·0	83·7	758·8
22 and 23	2,270	14·5	154·6	82·4	64·3	22·9	8·4	46·7	228·6	622·6	101·3	723·8
24 and 25	2,205	14·1	201·4	69·8	71·2	36·3	16·8	52·6	234·0	696·1	89·3	785·4
26 and 27	891	14·6	216·6	73·0	46·0	26·9	15·7	46·0	244·7	683·5	104·4	787·9
28 and 29	467	15·0	169·2	70·7	51·4	17·1	19·3	53·5	224·8	621·0	72·8	693·8
30 to 34	626	12·8	139·0	55·9	39·9	19·2	14·4	38·3	201·3	520·8	54·3	575·1
35 to 39	254	23·6	141·7	51·2	31·5	31·5	19·7	66·9	216·5	582·6	47·2	629·9
40 and over	100	20·0	210·0	130·0	10·0	—	40·0	60·0	180·0	650·0	90·0	740·0
Total, airmen	7,981	16·3	169·3	80·7	59·6	25·9	14·4	47·4	231·3	644·9	88·1	733·0
Total, officers	1,046	25·8	72·7	56·4	74·6	1·0	12·4	64·1	247·6	554·6	96·6	651·1
Total, abroad	9,027	17·4	158·1	77·9	61·4	23·0	14·2	49·3	233·2	634·5	89·1	723·6

* Not calculated.

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TABLE XVI.—SICKNESS, EXCLUDING INJURY, AT PRINCIPAL STATIONS ABROAD.

Station.	Average strength	Number of cases.						Percentage of total number of cases of disease at stations.					Case incidence per 1,000 of strength.		
		Dysentery.	Malaria.	Sandfly fever.	Total: dysentery, malaria and sandfly fever.	All other diseases.	Total all diseases.	Dysentery.	Malaria.	Sandfly fever.	Total: dysentery, malaria and sandfly fever.	All other diseases.	Dysentery, malaria and sandfly fever.	All other diseases.	All diseases.
Egypt.															
Aboukir ..	821	4	24	8	36	316	352	1·1	6·8	2·3	10·2	89·8	43·9	385·0	428·9
Abu Sueir ..	446	—	16	2	18	135	153	—	10·5	1·3	11·8	88·2	40·4	302·7	343·1
Cairo	451	4	13	14	31	152	183	2·2	7·1	7·6	16·9	83·1	68·7	337·1	405·8
Iraq.															
Baghdad ..	358	13	6	56	75	168	243	5·4	2·5	23·0	30·9	69·1	209·5	469·5	679·0
Basrah	466	10	480	18	508	222	730	1·4	65·7	2·5	69·6	30·4	1090·1	476·4	1566·5
Hinaidi ..	2,190	47	69	371	487	914	1,401	3·4	4·9	26·5	34·8	65·2	222·4	417·4	639·8
Mosul	366	20	60	97	177	221	398	5·0	15·1	24·4	44·5	55·5	483·6	603·8	1087·4
India.															
Karachi ..	746	10	196	30	236	260	496	2·0	39·6	6·0	47·6	52·4	316·4	348·6	665·0
Mediterranean.															
Malta and aircraft carriers ..	571	5	3	7	15	181	196	2·6	1·5	3·6	7·7	92·3	26·3	317·0	343·3

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TABLE XVII.—DYSENTERY, MALARIA AND SANDFLY FEVER AT STATIONS ABROAD.

Station.	Average strength.	No. of cases.										
		Dysentery.								Malaria.		Sandfly fever.
		Clinical		Bacillary		Protozoal		All types				
		Primary.	All.	Primary.	All.	Primary.	All.	Primary.	All.	Primary.	All.	
Mediterranean Littoral.												
Aboukir ..	821	—	—	—	—	4	4	4	4	9	24	8
Abu Sueir ..	446	—	—	—	—	—	—	—	—	13	16	2
Amman ..	158	1	1	—	—	2	3	3	4	4	8	6
Cairo and Heliopolis	451	—	1	2	2	—	1	2	4	4	13	14
Helouan ..	154	—	—	1	1	—	—	1	1	1	2	12
Ludd and Sarafand ..	154	—	—	1	1	6	7	7	8	—	1	5
Malta and aircraft carriers	571	1	1	—	—	1	4	2	5	2	3	7
Moascar ..	200	—	—	1	1	—	—	1	1	6	9	5
Ramleh ..	188	—	—	—	—	3	4	3	4	—	4	4
Various small stations and drafts *en route* ..	385	—	—	2	2	—	—	2	2	25	37	1
Total ..	3,528	2	3	7	7	16	23	25	33	64	117	64
India.												
Ambala ..	161	1	1	5	5	1	2	7	8	20	50	18
Karachi ..	746	—	—	5	5	5	5	10	10	106	196	30
Kohat ..	132	—	—	—	—	3	3	3	3	54	93	7
Lahore ..	137	—	—	1	1	—	—	1	1	36	79	5
Lower Topa..	106	—	—	—	—	1	2	1	2	7	24	1
Peshawar ..	154	—	—	1	1	—	1	1	2	33	57	11
Quetta ..	202	1	2	—	—	—	—	1	2	47	72	2
Risalpur ..	273	1	1	—	—	2	2	3	3	38	75	16
Various small stations ..	52	—	—	—	—	—	—	—	—	1	2	—
Total ..	1,963	3	4	12	12	12	15	27	31	342	648	90
Iraq.												
Baghdad ..	358	6	7	5	5	1	1	12	13	2	6	56
Basrah, Margil and Makina	466	5	6	1	2	2	2	8	10	196	480	18
Hinaidi ..	2,190	15	16	12	12	16	19	43	47	43	69	371
Mosul ..	366	6	6	5	5	7	9	18	20	39	60	97
Shaibah ..	156	3	3	—	—	—	—	3	3	28	47	7
Total ..	3,536	35	38	23	24	26	31	84	93	308	662	549

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TABLE XVIII.—DYSENTERY, MALARIA, AND SANDFLY FEVER ABROAD—MONTHLY CASE INCIDENCE.

Month.	Dysentery.						Malaria.						Sandfly fever.		
	Mediterranean Littoral.		India.		Iraq.		Mediterranean Littoral.		India.		Iraq.		Mediterranean Littoral.	India.	Iraq.
	Primary cases.	All cases.	Primary cases.	All cases.	Primary cases.	All cases.	Primary cases.	All cases.	Primary cases.	All cases.	Primary cases.	All cases.			
January	—	—	—	—	2	2	3	5	9	19	9	24	—	1	—
February	1	2	—	—	2	2	—	2	1	6	3	8	—	—	—
March	—	—	1	1	3	3	—	1	3	14	8	19	1	1	2
April	—	—	4	4	10	11	1	5	10	32	6	11	1	1	10
May	—	—	—	—	11	12	1	3	2	28	54	84	7	6	67
June	3	4	1	1	3	5	1	2	18	40	108	174	8	10	78
July	4	4	3	5	2	4	3	8	13	43	26	81	17	12	131
August	5	7	2	2	5	5	5	9	33	63	14	45	11	13	101
September ..	4	5	3	4	4	4	10	16	71	121	16	38	10	7	88
October	4	6	7	7	15	16	23	33	112	169	22	54	5	21	62
November	2	3	5	6	12	12	13	26	53	80	22	65	3	14	10
December	2	2	1	1	15	17	4	7	17	33	20	59	1	4	—
1926 Total ..	25	33	27	31	84	93	64	117	342	648	308	662	64	90	549
Case incidence per 1,000 of strength															
1926	7·0	9·4	13·8	15·8	23·8	26·3	18·1	33·2	174·2	330·1	87·1	187·3	18·1	45·8	155·3
1925	3·9	4·4	7·1	8·2	45·6	52·0	7·7	23·9	88·8	236·4	51·9	100·9	17·3	61·8	141·7
1921–4	11·0	13·8	12·6	22·7	30·1	37·9	10·6	25·5	107·8	240·9	55·9	121·3	72·8	70·4	297·0

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CHAPTER IV.—MISCELLANEOUS.

The Central Medical Board.

54. The constitution and functions of the Central Medical Board have been described in previous reports. The total number of examinations conducted by the board during 1926 was 2,227 compared with 2,472 in 1925. Of this total, 672 were for the purpose of assessing the physical fitness for flying duties of candidates for commissions in the general duties branch of the Regular Air Force and these examinations are analysed in Table XIX, page 61. A further 520 were held to determine the fitness of candidates for commissions in various branches of the service. 301 were candidates for the reserve, of whom 243 were accepted; 41 for the Auxiliary Air Force, of whom 33 were found fit; 136 were examinations for permanent commissions of which 87 were new entrants for the chaplains, medical, stores, accountant, legal and dental branches, 46 were among serving officers and 3 were university nominations for the general duties branch. Of the 136 candidates examined, 83 reached the required standard. A further 42 examinations were carried out on candidates for Princess Mary's R.A.F. Nursing Service and entrants into the R.A.F. Cadet College. Of the remaining 1,035 examinations carried out by the board, 1,025 were held on serving personnel of the categories enumerated in table XIX and above, in order to ascertain their fitness for the duties of the various branches to which they belonged, and 10 were medical boards on pensioners.

55. The causes for the rejection of candidates both finally and temporarily are analysed in table XXI, page 63. As in previous years, the chief cause of rejection was defective vision, 41 per cent. in 1926 as compared with 38 per cent. in 1925.

56. The average results of the physical efficiency tests and measurements in each class of accepted candidate who finally entered the service, as shown in table XIX, are recorded in table XX, page 62. Sixty-one only of the 71 cadets shown as accepted are analysed; the remaining ten were appointed to cadetships in the Army or Royal Marines. Twenty-nine candidates for short service commissions are not included as although found fit they did not for personal reasons take up their commissions.

57. The percentage of candidates accepted as medically fit for full flying duties is slightly higher in each group compared with 1925 except in the Fleet Air Arm and among airman pilots. Of the 46 officers serving on short service commissions

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who were examined as to their fitness for permanent commissions only two were rejected—a percentage acceptance of 96 as compared with 98 in 1925.

Medical Officers' School of Instruction and Medical Research Laboratory.

58. During the year 1926, 28 medical officers attended for courses of instruction; of these, 24 had recently been appointed to short service commissions, three came from the Royal Naval Medical Service, and one from the Royal Canadian Army Medical Corps.

Flying Aptitude Apparatus.

59. During the year, the flying aptitude apparatus, mentioned in previous reports, was tested at No. 2 Flying Training School.

Procedure.

60. In order to maintain, as far as possible, an entirely unbiassed attitude towards the apparatus pupils were allotted code numbers. Graphs produced were identified by their numbers alone, and the key of the code has been kept secret from the whole instructing staff. By this means it was possible to ensure that the assessment of flying ability made by the instructors and the results produced by the apparatus were absolutely independent, and, therefore, form a sound basis for comparison.

61. *Assessment of flying aptitude.*—(i) *Senior term.*—All senior term pupils were tried on the apparatus at the beginning and again at the end of the term, *i.e.* half-way through and at the end of their flying course. Independent reports on each pupil's flying ability were obtained at the same time from the flying instructors.

(ii) *Junior term.*—The junior term pupils were tested upon the apparatus at the beginning of, and half-way through, their flying course at the end of training on Avro aircraft, and the results were compared with the instructors' reports.

62. *Use for training aptitude.*—Half the junior term pupils were selected for practice upon the apparatus. The selection was made in such a manner as to ensure that the average aptitude (as shown by the initial graphs) of those chosen to undertake such practice was approximately the same as that of those who would not undergo such practice.

63. *Special cases.*—A certain number of special cases were tested and gave interesting results, including an *ab initio* pupil who had been injured in a flying accident while at the Central Flying School, and one Cranwell cadet.

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Results.

64. *Assessment of flying aptitude.*—(i) *Senior term pupils.*—Initial graphs of these pupils, who had completed training on Avro aircraft, gave an assessment that tallied very closely indeed with that made by flying instructors, the outstanding features being :—

(*a*) the clear selection of the two doubtful pupils, one of whom subsequently ceased training ;

(*b*) the definitely slower aptitude of certain pupils who were making slow progress ;

(*c*) the selection of the two best pupils who had been assessed by their instructors as " natural " pilots ;

(*d*) the general agreement at this stage of training between the assessments by the flying instructors and by the apparatus, 19 assessments out of 32 being in complete accord ; of the others, only one pupil differed more than one degree in placing, who, it is interesting to note, was recovering from the effects of concussion. The apparatus, in this case, showed that, although average flying proficiency was manifest, yet some effects of the accident were still present.

After completion of their training on service aircraft, 19 assessments out of 27 were in accord ; in the other cases there was only one degree of difference in assessment, which in several cases was probably accounted for by the fact the the subjects were flying Vimy aircraft, and, therefore, the heavihandedness recorded by the apparatus was not reflected in the degree of flying skill exhibited.

(ii) *Junior term pupils.*—These were assessed by an initial examination into three groups :—

I. Promising pupils likely to be graded A, B or high C.

II. Average pupils whose success in flying depended largely upon their power to improve.

III. Pupils below average who would be graded either D (unsatisfactory pilots) or E (unsuccessful) unless they showed great ability to improve.

On completion of their training on Avro aircraft, comparison with instructors' reports showed that the forecast in respect of groups I and III were remarkably accurate, the results on the apparatus, after training, showing that the apparatus is of value in indicating the degree of improvement, or otherwise, of pilots during training, and the assessment by the apparatus again agreed very well with that of the instructors, there being practical agreement in 23 out of 26 assessments.

65. *Practice on the apparatus.*—(i) *Failures.*—That the apparatus cannot train pupils who possess no aptitude, or lack other qualities necessary for flying, was effectually shown by the fact that, despite practice upon the apparatus, two pupils were

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rejected by the flying instructors as unlikely to become sound pilots. It is noteworthy, however, that the pupils showed no improvement in the use of the apparatus.

(ii) *Time before going first solo.*—Of the 16 pupils practising upon the apparatus—by the end of the fifth week of training, four had gone solo, as against two among those who were not practising, and at the end of the ninth week ten had gone solo as against six among those who were not practising. This result, although the numbers are small, appears to indicate that practise upon the apparatus by the apt pupil aids flying training.

(iii) *Special training.*—In a number of instances pupils under training on the apparatus were sent down by their flying instructors to practise with a view to the elimination of certain specific flying faults. It is naturally impossible to procure any concrete evidence as to the success or failure of this specialised training, but that instructors have faith in its efficiency is shown by the fact that this move was made on the initiative of the instructors themselves and tended to increase with experience.

66. *Concussion cases.*—The medical officer at the station found the apparatus of great value in testing the ability of pilots after minor accidents causing slight concussion—the written curve serving to indicate whether any instability had been induced, which contra-indicated immediate resumption of flying.

Conclusions.

67. The following conclusions have been tentatively reached :—

(i) *Value for purposes of assessment of flying aptitude.*—The assessment of flying aptitude made by the apparatus is sound and is confirmed by subsequent flying experience. The apparatus offers great assistance in arriving at a decision regarding a doubtful pupil. In the past such decisions have had to depend entirely on the unsupported opinions of instructors, anything in the nature of definite evidence rarely being available. The graphs produced on this apparatus constitute definite evidence of not only physical but also in some cases of temperamental attributes. In view of the fact that everyone whose average reaction time (at the initial test) was over approximately four seconds, proved to be an unsatisfactory pupil in the air, it appears possible to set a standard on the apparatus. The possibility of error in doubtful cases (due to a temporary physical or mental condition) could be pratically removed by giving a further test after a certain lapse of time.

(ii) *As an aid to flying instruction.*—Practice on the apparatus cannot induce flying aptitude into an individual who does not naturally possess it. It appears, however, that when properly supervised practice on the apparatus (*a*) induces in many pupils a facility in the co-ordinated movements employed in flying, so that the instructor is

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provided with more apt material for training, and (*b*) may help to eradicate certain definite flying faults. As such, the apparatus appears to offer a means of saving time and money in training. In view of the fact that during this experiment practice on the apparatus was carried on concurrently with flying training, it has not been possible to assess its value as a separate training instrument. It is doubtful, however, whether it should ever be employed as such, since, if used separately, there is a danger that a pupil on it might get the impression that the apparatus was teaching him to fly, which it cannot do.

Summary.

68. So far as the experiment has proceeded up to date it has produced evidence to show that this apparatus can be of definite value :—

(i) By assisting in original selection and thereby effecting considerable economies by reducing wastage in *ab initio* training.

(ii) By assisting in the earlier elimination of unsound pilots, and thereby effecting economies by further reducing wastage both in training and service units.

(iii) By assisting in the actual flying training of pupils.

At the same time it is important to emphasize that the apparatus merely records the aptitude of the invidual to perform certain functions, and enables him to practise and subsequently develop the nerves and muscles which carry out those functions—functions similar to those performed in flying. The apparatus was not designed to teach and cannot teach a pupil to fly, and in consequence should not be called, or known as, a " flying training apparatus," but as a " flying aptitude apparatus."

Aviation Deafness.

69. As the results of experiments for the prevention of deafness in noisy aircraft, a new type of ear defender, together with special modification of the standard flying cap, gave results which appear likely to be successful.

Visual Fatigue.

70. Experiments have also been in progress to ascertain the effects of rotation upon visual judgment. In addition, an investigation carried out as to the causes of eye fatigue in the Middlesex County Council Weights and Measures Checking Laboratory enabled the cause to be ascertained and suggestions to be advanced for modification of the apparatus employed in such a manner as to mitigate eye strain.

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Physical Efficiency of Serving Officers of the Royal Air Force.

71. With very few exceptions each officer and airman pilot was medically examined at the end of 1926 and the results recorded on special cards : 3,402 cards were received. This total does not, however, tally exactly with the strength of officers and airman pilots at the end of 1926, as those who were patients in hospital were not examined and there is always a small percentage both of officers and airman pilots who miss the examination through unavoidable causes.

72. Table XXII, page 64, shows the physical assessments in respect of flying duties of 2,216 officers of the general duties branch who are called upon to fly. Those officers who are shown as unfit for full flying duties include those who were temporarily unfit at the time of examination and it is to be understood that many shown as unfit were fit for flying duties excluding piloting.

73. Table XXIII, page 65, records the results of further examinations of the 2,216 officers referred to in para. 72 and 215 airman pilots. The officers are classified as fit or unfit but as only seven airman pilots were found unfit no subdivision of the total 215 has been made. In each of the tests the unfit group shows a lower standard than the fit.

74. Table XXIV, page 66, analyses the results of those physical efficiency tests carried out at the annual examination which were capable of numerical expression and relates to 1,968 officers and 208 airman pilots who were found fit for full flying duties at the end of the year. The figures closely approximate to those of previous years showing, if anything, a tendency to improvement. All the figures, both of officers and of airman pilots who show a standard closely comparable to that of officers, are above the accepted standards.

75. Table XXV, page 68, analyses the causes of unfitness of the 248 officers shown as unfit in table XXII. In 1925 defective vision was the commonest cause of unfitness and accounted for 28 per cent. of the total ; in 1926 this same cause comes second in order of frequency but still accounts for 27 per cent. of all cases of unfitness. The chief cause of unfitness in 1926 was medical—over 38·3 per cent. of all cases unfit compared with slightly under 28 per cent. in 1925.

76. 264 cards were rendered for officers of the general duties branch who are not called upon to fly, *i.e.* officers over the age of 40, above the rank of wing commander, employed on technical duties or retained to complete service for pension. Of these 264 officers 105 were fit for full flying duties, 23 for limited flying duties—a limitation of duration of flight, height and aerobatics—32 as combatant passengers and 69 as passengers only. Thirteen

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were found to be permanently unfit for any form of flying and, of these, eight were only fit for ground duties at home. One was considered temporarily unfit for any form of flying duty, but fit for ground duty at home or abroad, while three were temporarily unfit for any form of duty. The remaining 18 were found fit for home service only, two on full flying duties, two on limited flying duties and fourteen as non-combatant passengers. Cards were also received for 674 officers of the stores, accountant, medical, dental, legal and chaplains branches. 644 of these were considered fit for the duties of their branch and, of the remainder, 15 were fit for their full duties at home only, 5 were temporarily unfit for any duty, 6 were permanently unfit for any form of flying but fit for ground duties at home only, 3 were permanently unfit for any form of flying duty but fit for ground duty at home and abroad while one was found permanently unfit for any form of duty.

Medical Examination of Recruits.

77. The medical examinations of recruits during 1926 were carried out in accordance with the procedure which has been described in earlier reports. The only depôt open, however, in 1926 was in London and that, except for special enlistments, from January to 15th June only.

78. The number of medical practitioners employed was 69 at the end of each month and the total number of recruits (over 18 years of age) examined by them was 294. Of this number, 160 were considered fit to proceed to the London depôt for the more detailed examination.

79. In all 637 recruits were examined at the London depôt of whom 379 were accepted as medically fit, and 247 finally enlisted; the remaining 11 were rejected on grounds other than medical. At Halton 1,057 aircraft apprentices (14–17 years of age) were enlisted.

80. The small number of enlisted recruits renders a table showing their average physical measurements by age groups, such as has been published in previous reports, of very little value; it has therefore been omitted. The average height, weight and chest measurement of boys was 5 ft. 5 in., 116 lbs., and 33·2 in., compared with an average during the years 1920–1925 of 5 ft. 4·9 in., 112·6 lbs., and 32·5 in.

81. Table XXVI, page 68, analyses the causes of rejection of the 258 applicants who were not accepted as medically fit, and once again, as in previous years, the main cause of rejection is "loss or decay of many teeth." "Diseases of the heart," which in 1924 and 1925 was second in frequency as the cause of rejection, takes third place in 1926, and "deformities of the feet" comes into second place from third in 1924 and fifth in 1925. "Poor physique" occupies fourth place as in 1924 and compared with

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third in 1925. The main cause of medical unfitness in recruits since 1921 has been " loss or decay of many teeth " and the second third and fourth places in the list of causes have usually been filled by one or other of the following, " diseases of the heart," " poor physique," and " deformities of the feet."

Hygiene and Sanitation.

HOME.

82. Satisfactory progress in the improvement of sanitary conditions was reported throughout the home commands and the high standard of the past was fully maintained.

83. *Accommodation.*—The improvement in the accommodation at stations was progressive in so far as the policy outlined in the report for 1925 would allow. At Kenley, Hawkinge and Henlow married quarters for airmen were completed and further quarters for married airmen were commenced at Digby, Sealand, Uxbridge and West Drayton. At Gosport and Leuchars dampness of the walls and floors of the existing buildings was prevalent, owing to their nature, situation and construction. Special measures, which it is hoped will prove effective, were taken to counteract this nuisance. At Gosport a scheme is under consideration for the building of new quarters for the personnel at present quartered in Fort Rowner and Fort Grange.

84. *Conservancy.*—All sewage effluents were chemically and bacteriologically examined at the R.A.F. Pathological Laboratory during the year and were up to standard. Routine inspections of sewage disposal plants were carried out by the Works and Buildings Department with which constant liaison was maintained. The disposal of refuse was carried out satisfactorily and incinerators maintained in good repair. A scheme was adopted at certain stations for the removal of camp refuse under civilian contract, which, it is anticipated, will prove a more economical arrangement.

85. *Water supplies.*—Routine analyses of all water supplies were carried out at least once during the year with satisfactory results and call for no comment. The water supplies of married quarters, if from other than station sources, were also subjected to examination, with favourable results in nearly all cases.

86. *Food and cooking.*—The quality and variety of the food supplied were satisfactory and the arrangements for preparation and storage very good. Small quantities of both fresh and tinned foods were condemned. No outbreak of disease of food origin was reported during the period under review, this being sufficient tribute to the efficacy of the methods adopted for supervision.

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87. *Courses and lectures.*—Lectures on hygiene and sanitation were delivered to cadets, officers due for promotion examination and airmen completing the proficiency course at the Cadet College. Examination recorded a satisfactory standard of knowledge attained. Courses of lectures on hygiene on simple lines were given to all personnel at the Depôt, Uxbridge. To facilitate instruction and promote interest a small, but instructive, selection of sanitary models was made at Uxbridge and proved most helpful. At the three-week courses held at the School of Hygiene, Aldershot, a total of 11 officers and 46 airmen obtained pass marks; in addition 6 airmen (medical branch) passed the long course of four months' duration. Systematic lectures on venereal disease and personal hygiene were delivered to airmen on all stations during the year.

88. *General.*—(i) The health of the force at home was satisfactory. A mild outbreak of scarlet fever occurred among the aircraft apprentices at Flower Down during the last quarter of the year. Investigation revealed no local source of infection. It was considered that the first two cases were already infected prior to arrival from Halton where a minor epidemic, which is referred to later in this chapter, had broken out at this time, and that the remainder were all due to contact. The extension of the outbreak was attributed to no sign of the disease being discernible until the final stage (peeling) was reached.

(ii) When compared with the previous year the incidence of influenza was low; prophylactic measures were again applied.

(iii) A procedure for the selection and recording of suitable volunteers for blood-transfusion was instituted in order that the least possible delay may occur in cases requiring such treatment.

(iv) The health of officers and airmen on board H.M. transports was satisfactory throughout the trooping season.

(v) Further improvement was recorded in the recreational facilities provided. Every endeavour is made to foster the interests of sport among airmen as this greatly enhances the health and efficiency of the force.

(vi) The improvements carried out in 1924 at Kidbrooke in the armourers' shop have, with experience, not proved as successful as was anticipated. Further cases of illness occurred due to fumes from the caustic soda baths. After investigation it was considered that additional alterations were necessary. These included the fitting of ridge roof ventilators at intervals throughout the length of the shed, the provision of a more modern type of fume-hood with central exit to vent pipe and the raising of the vent pipe still higher to increase the upward draught. These recommendations were put in hand and the work should be completed at an early date.

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Middle East.

Egypt.

89. Meteorological features of note in the Nile Delta during the year were as follows :—

Atmospheric pressure was above the normal during January, February, November and December, while for the remaining months it was about the average recorded. The mean maximum temperature was slightly below the average, the highest absolute maximum temperature recorded in Egypt was 110° F. at 12·00 hours on 9th June. The mean temperature was slightly below the normal throughout the year. Humidity remained fairly constant and about the average. Earth tremors were experienced in the Cairo district on 17th March and also on the 26th June. No abnormal weather conditions were experienced during the period under review.

90. *Accommodation.*—Many improvements were reported in the accommodation at stations including :—

At Heliopolis building was commenced on the three-storeyed barrack block referred to in the previous report. The new quarters at Aden are now in occupation and the conditions for airmen in the trying climate of this station greatly improved. New married quarters were completed at Aboukir and the building of more quarters was commenced at Helouan. New sick quarters were completed at Abu Sueir ; these are now in occupation and are of the utmost value to the large Flying Training School. Plans have been drawn up and sanctioned for new sick quarters at Heliopolis and building will shortly be begun. The accommodation for workshops was satisfactory.

91. *Water supplies.*—The drinking supply at Aboukir continues to be drawn from the grossly polluted source already referred to in previous reports. The addition in April of a Paterson's Chloronome greatly improved the accuracy and efficiency of the chlorination. The bacteriological results with few exceptions were satisfactory. At Moascar, as analyses frequently showed the water supplied to be bad, a Paterson's Chloronome was erected and is working satisfactorily and gives a bacteriologically pure water. At Helouan analyses supplied by the Public Health Department occasionally show bad results and thus the advisability of controlling the purity of the supply in the R.A.F. station is established.

92. *Conservancy.*—Drainage and sewage systems were maintained and worked satisfactorily during the year. A new Horsfall destructor was erected at Aboukir. Consideration was given to a proposal for centralization of incineration for the whole of Aboukir but in practice, owing to distance, the present system of incinerators in each squadron's lines was found to be more satisfactory.

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93. *Food and cooking.*—The standard of rations supplied was adequate and the preparation and storage satisfactory.

94. *General.*—An increase in the incidence of primary malaria and sandfly fever was reported. Every endeavour was made to control mosquitoes by the usual preventive measures. Investigation showed no particular reason to account for this increase in sandfly fever which was of a mild type and treated mostly in sick quarters. An outbreak of typhoid fever, confined to pupils resident in the country less than 12 months, occurred in the autumn at the Flying Training School, Abu Sueir. No cause of the outbreak was discovered but all necessary precautions were taken to minimise and prevent the spread of infection.

PALESTINE.

During the year important changes were made affecting the strength and administration of Transjordan and Palestine. The command ceased to be an independent one with effect from October when it was included under the administration of the Middle East area.

96. *Accommodation.*—Owing to increased numbers being stationed at Amman, accommodation became inadequate. Investigation showed that overcrowding was considerable and conditions were eventually relieved by the transfer of one flight to Ramleh. Accommodation generally at other stations was adequate and satisfactory.

97. *Water supplies.*—The water supplies of all stations were adequate although the quality was at times unsatisfactory, especially at Ramleh. Attempts to chlorinate this supply were not satisfactory and instructions were issued for all water to be boiled before being used for drinking purposes.

98. *Conservancy.*—The water-borne systems at Amman and Ramleh worked satisfactorily and the effluent was disposed of by irrigation without trouble. The bucket system of the cantonments was also satisfactory; the central destructor worked efficiently.

99. *Food and cooking.*—The food supplied and its preparation and storage throughout the year were satisfactory. The meat generally was good; during the cold weather issues for hanging were authorized the day before consumption in order to ensure that they were completely thawed. Bread continued to be of excellent quality, while, with few exceptions, bacon also was good. Tinned condensed milk and mineral waters were issued and periodically analysed; the premises where manufactured were frequently inspected and always found in a satisfactory condition. Personnel employed in the handling and preparation of food were subjected to medical examination for evidence of infection.

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100. *General.*—The incidence of disease was comparatively low, although an increase in the number of cases of amoebic dysentery was reported. No special cause could be found for the increase although flies, which appeared to be more numerous in certain areas, may have contributed to this increase. Anti-malarial measures similar to those of previous years were carried out with excellent results. At Jaffa during June a rest camp was opened for the purpose of providing suitable conditions and environment to complete the cure of convalescents from hospital, for those needing a " rest-cure," and to give officers, families of officers and airmen, and also selected airmen, an opportunity of leave by the sea. A high standard of health was maintained and the sanitary conditions of the camp were very good. It was considered that the objects outlined were fully achieved and that the camp was a success.

MALTA.

101. The distribution of personnel was similar to that in previous years and the health of all personnel during the period under review was good. A small outbreak of enteritis was reported during the summer months and efforts were made to trace the source of infection without success. It was considered that infection was probably contracted in neighbouring villages where the airmen had had meals. No carriers were found amongst the kitchen staff. The incidence of sandfly fever again was very low. The progressive reduction of the incidence of this disease during the past three years shows clearly the value of the routine anti-sandfly measures which are annually carried out.

102. The water supply is obtained from civilian reservoirs by pipe lines and periodical analyses were carried out by the military authorities. No defects were reported in the system during the year.

103. The sanitary condition of all areas occupied throughout the period under review was satisfactory.

IRAQ.

104. The meteorological statistics for 1926 were :—

	Baghdad area.	Basrah area.	Mosul area.
Maximum temperature	120·3	121	118
Minimum temperature	30·4	34	31·6
Rainfall	351·8 mm.	305 mm.	579·2 mm.

The maximum temperatures recorded were rather higher than in the previous year, but generally the summer heat was not above the average. Rainfall was much higher than normal for all areas due to the heavy rains occurring in the last two months of the year. In the spring, floods were particularly severe and the

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bursting of the bund in Baghdad North caused large areas to be inundated. Some inundation also occurred in the Basrah area. Not until late in the summer were these areas drying up, with the natural consequence of a large increase in the extent of insect-breeding grounds.

105. *Accommodation.*—Ample accommodation was provided at all stations and buildings generally are quite suitable and sufficiently provided with fans. It was necessary to utilise a few old mud buildings, but these are being vacated as opportunity occurs.

106. *Water supplies.*—All water supplies were periodically examined during the year, as only by frequent analysis can constant supervision be maintained as to the efficiency of the means of treatment. The standard of purity throughout was satisfactory.

107. *Conservancy.*—The disposal of sullage water and urine remains a difficult problem. The systems in use include—(*a*) collection in tanks and removal by lorries and sullage wagons which dump the waste in the desert away from camps, (*b*) soakage pits, and (*c*) irrigation beds. As none of these methods is free from objection constant supervision was necessary to obviate unpleasantness. Irrigation beds, when properly laid out and superintended, form as satisfactory a method as any; the least laxity makes them a source of trouble. The disposal by dumping, used principally at Hinaidi, is expensive although fairly satisfactory during the dry weather. During wet weather it is sometimes impossible for lorries to get to the pits with the result that overflowing occurs before they can be emptied. Efforts are being made to run the light railway to all pits as this means of collection is not affected by wet weather. Incineration was satisfactorily and efficiently carried out. As opportunity offers the " beehive " type, principally used throughout the country, is being replaced by the open type of destructor.

108. *Food and cooking.*—The food supplied was of good quality and sufficient. Careful supervision, essential in such a climate, was exercised with the result that no complaints were recorded. Milk supplies, drawn from a number of sources, were closely supervised and, further, the milk was always either pasteurised or boiled before use. Mineral waters are mostly supplied by private contractors with, in some cases, factories in camp areas. The standard of cleanliness was good and all mineral waters were subjected to frequent analysis. As a result of recent developments in the preservation of foodstuffs without serious detriment to their content of vitamin C, a supply of a concentrated orange-juice has been placed in Iraq for use as an antiscorbutic.

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109. *General.*—Generally, the health of all personnel was good. The incidence of dysentery showed a decrease as compared with 1925, while that of the enteric group and malaria a further rise. The increase of malaria was undoubtedly due to the after-effects of the floods, pools of water remaining over an enormous area even in the late summer. Thirty-one cases, with nine deaths five of whom were R.A.F. personnel, were recorded under " effects of heat " during the year ; of these, thirteen were attributed to heat hyperpyrexia, with eight deaths, and eighteen to heat exhaustion, with one death. Some of these cases presented unusual clinical features, having only slight untoward symptoms before the onset of hyperpyrexia, and lingering for many days thereafter. The withdrawal of cerebro-spinal fluid and the administration of pilocarpin were ineffectual in all cases, while in spite of the different clinical pictures shown by the nine fatal cases, the post-mortem findings were similar. No acetone-bodies were detected in the urine. In no case was there any evidence of undue exposure to the sun, of excessive muscular activity, nor of failure to observe the comprehensive regulations which are issued annually with a view to the prevention of this malady. It is noteworthy that humidity was rather lower on the average than in previous years. In his special report on these cases, the Principal Medical Officer gives his opinion that the predominant factors in producing " heat cases " are a rapidly-rising shade temperature over 110° F. and intrinsic defect in certain persons by which damage occurs early to the heat and respiratory control centres which though small at first is progressive, and may take many days to become apparent.

INDIA.

110. The accommodation was good and sufficient. Some of the older barracks are in need of repair to walls, floors, punkahs, etc., which, as far as possible, is being carried out with due regard to the present financial situation.

111. Water supplies are derived from cantonment sources and were analysed at each station, generally with favourable results. At Lahore, the bacteriological standard not being satisfactory, instructions were issued that all drinking water was to be boiled.

112. The quality and preparation of all food supplies were satisfactory. Supervision was maintained over all canteens of private contractors with complete satisfaction regarding cleanliness and wholesomeness of supplies.

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113. The fly menace is perhaps the most difficult problem in the country owing to the environment of all stations. Measures for the protection of food, fly-proofing of latrines and kitchens and the killing of as many adult flies as possible were satisfactorily carried out.

114. Inspection of fans and punkahs showed that greater care and supervision in handling were necessary; action was taken to ensure this. Quetta is the only station not supplied with either.

115. Malaria considerably exceeded the normal seasonal incidence and was the highest recorded for the force. The occurrence coincided with an equally heavy incidence among the civil population. Investigation showed a tendency to slackness in the care of nets, the proper adjustment of punkahs, and personal prophylaxis. Measures were taken to remedy this and to ensure that officers and airmen realised the importance of close co-operation and individual effort. Generally the health of the Royal Air Force in India during 1926, except for the undue prevalence of malaria, was satisfactory.

Vaccination and Inoculation.

116. *Vaccination.*—Drafts totalling 2,211 left the United Kingdom, all having been recently vaccinated. Primary and secondary vaccinations performed at home during the year numbered 5,737, equivalent to a ratio of 235·3 per 1,000 of strength, compared with 244·4 in 1925, 275·6 in 1924, and 378·6 in 1923. Abroad, 2,344 vaccinations were performed recording a ratio of 259·7 per 1,000 of strength as compared with 232·6 in 1925. The vaccination state of the total force continues to be satisfactory.

117. *Inoculations.*—At home, 1,831 persons received one dose of T.A.B.C. vaccine and 2,711 two doses. Abroad, 7,227 inoculations were performed, of which 1,516 were single doses, being distributed as follows—Mediterranean 170 two-dose; Middle East 2,165 one-dose, 637 two-dose; Iraq 1,777 one-dose, 707 two-dose; and India 1,769 one-dose, 2 two-dose. A high inoculation state was maintained amongst all personnel both at home and abroad.

Pathological Work Performed in R.A.F. Laboratories.

118. The total number of routine specimens examined in the R.A.F. pathological laboratories in the United Kingdom and abroad, during 1926, amounted to 32,252; that is, 4,354 more than during the previous year. A synopsis of the work done in each laboratory is shown in table XXVII, page 69.

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119. The following stock vaccines were prepared and issued by the pathological laboratory at Halton for use in the Royal Air Force during the year :—

Acne and staphylococcus	1,250	c.c.'s.
Cholera	5,500	,,
Gonococcus	125	,,
Influenza	8,750	,,
Pneumococcus	200	,,
Staphylococcus	1,750	,,
Streptococcus	350	,,
T.A.B.	21,550	,,
Whooping cough	50	,,

120. Two officers and nine orderlies received special instruction in pathology and hygiene. In addition, a short series of lectures in medical bio-chemistry was inaugurated.

121. Special attention has been paid in the period under review to certain aspects of the laboratory study of diphtheria, dysentery, malaria, and scarlet fever. A summary of this work follows.

122. *Diphtheria.*—(i) Owing to an outbreak of diphtheria amongst the married families in the Halton command, it was deemed advisable to attempt to protect by modern methods the aircraft apprentices in the command against that disease, especially as they were signed on for twelve years' continuous service.

(ii) The Schick test was applied to these apprentices, 1743 in all, as a preliminary measure to determine their susceptibility to the disease. The test proved that there were 1215, i.e., 69·7 per cent. immune, and 528, i.e., 30·3 per cent non-immune to diphtheria. The average age of these apprentices was 16·4 years. Further details are given below. The non-immune apprentices were given diphtheria toxin-antitoxin mixture once weekly for four consecutive weeks in the following doses : 0·5 ; 0·5 ; 1·0 ; 1·0 c.c. The injections were given subcutaneously on Saturday evenings so as not to interfere with the routine duties of the apprentices. The reactions were slight and there was no loss of working hours. All the tests and protective inoculations were carried out after duty hours, and there were no excessive reactions necessitating time off duty. In addition, no case of diphtheria occurred among these apprentices.

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RESULTS OF SCHICK REACTION APPLIED TO AIRCRAFT APPRENTICES AT No. 1 SCHOOL OF TECHNICAL TRAINING, HALTON, DURING FEBRUARY, 1926.

Wing.	Squadron.	No. of Aircraft Apprentices Tested.	Positive Reactors.	Pseudo-Positive Reactors.	Diphtheria Positive Reactors.	Total Positive Reactors.	Pseudo-Negative Reactors.	Total Negative Reactors.
1	A.	283	99	12	1	112	12	171
	B.	322	113	19	4	136	6	186
	C.	289	58	18	1	77	12	212
2.	A.	273	42	26	1	69	12	204
	B.	283	47	17	—	64	5	219
	C.	293	29	40	1	70	12	223
Total		1,743	388	132	8	528	59	1,215
Expressed as percentages . .			22·2	7·5	0·5	30·3	3·3	69·7

Explanatory Note :—

Positive reactors = non-immunes to diphtheria.

Diphtheria positive reactors = positive reaction in case with definite past history of diphtheria.

Total positive reactors = sum of all the above positives.

Negative reactors = immunes to diphtheria.

Average age was 16·4 years.

123. *Dysentery.*—(i) A special report form for dysentery returns was devised and issued to all R.A.F. laboratories. The purport of this form was to ascertain the extent to which each clinical case of dysentery was investigated by laboratory methods. Unfortunately, complete returns are not available from all the laboratories, but in Iraq, at Hinaidi and Basrah, every case of clinical dysentery occurring amongst R.A.F. personnel during 1926 was subjected to a complete laboratory examination to determine the type of infection.

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(ii) In the Hinaidi-Baghdad district there were 60 cases of clinical dysentery, 26 were diagnosed as protozoal, 17 as bacillary (i.e., 8 Flexner, and 9 Shiga type), and 1 as helminthic. In 16 cases no casual organism was found. Returns from Basrah show that there were 10 cases of clinical dysentery, and laboratory examinations showed 4 to be amœbic (3 of these being invalided from Baghdad), 3 to be bacillary dysentery of the Flexner type, and 3 to be helminthic infections.

(iii) In Iraq, 258 of the personnel engaged in the handling of foodstuffs for the R.A.F. were examined as a routine measure to detect and eliminate " carriers " of dysentery and enterica. Of these, 31, that is 12 per cent. were found to be carriers ; the fæces of 20 contained entamœba histolytica, of 4 ancylostoma, of 2 other nematodes, of 3 tapeworms, of 1 bacillus typhosus, and of 1 b. paratyphosus B.

(iv) At Halton, 75 subjects who had returned from abroad with a previous history of dysentery were investigated. Pathogenic organisms were found in the fæces of 30, that is 22·5 per cent of these patients. Entamœba histolytica was the organism most frequently found ; present in 22 cases, either alone or in conjunction with lamblia or trichomonas. These findings are of interest as regards the question of chronic dysentery and the carrier condition, but throw little or no light on the original infection.

(v) It will be noted that the percentage of bacillary dysentery infections has greatly increased this year ; this is probably due to the fact that most of the cases of clinical dysentery have been subjected to the additional aid of laboratory diagnosis. No case of mixed bacillary and protozoal dysentery is recorded during this period.

124. *Malaria.*—At Basrah, 4194 blood smears were examined for malaria parasites. The strength of the Basrah command during 1926 was about 1,200, including personnel of the Royal Air Force, Indian Army and camp followers. Of this number 667 (i.e. about 50 per cent) were found to harbour one or other type of malaria parasite in their peripheral blood. No distinction is made here between primary and recurrent infections. There were 597 cases of benign tertian, 57 of malignant tertian, 12 of benign and malignant tertian combined, and only one of quartan malaria. The case of quartan malaria occurred in a sepoy of the 4/19th Hyderabad Regiment, who was probably infected elsewhere than in Basrah. The benign tertian cases occurred earlier in the year than those of the malignant type ; the latter made their appearance chiefly in July and August.

125. *Scarlet Fever.*—(i) A sudden outbreak of scarlet fever occurred amongst the apprentices at Halton in October, 1926. Seven cases developed practically simultaneously, all confined to one part of the camp, namely, No. 4 Wing.

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(ii) Investigation of this outbreak showed that there was no evidence of contact infection, as no two patients had occupied the same barrack room nor had they been in close contact in school or shops. The general character of the outbreak suggested that the infection was derived from some fairly widespread source such as food supply, but as the other apprentices wings (Nos. 1 and 2) did not suffer from the fever, it was clear that food and places of entertainment that were common to the camp were unlikely to be sources of infection. Milk, though a common item in the dietary of all personnel, was found to have different sources of origin for various parts of the camp. Particular attention was, therefore, focussed on the milk supply, and, although streptococcus was not isolated from the milk, one supply to No. 4 Wing was found to have an increased protein content and to contain a moderate number of pus corpuscles. The view that this was a milk-borne infection is further favoured by the fact that, except for three definite contact cases, the outbreak ceased with the introduction of general prophylactic measures, including the boiling of all milk prior to use.

(iii) The Dick test was applied to the contacts and gave the following results :—

Average age of boys tested ..	16·9 years.		
No. of contacts tested	155		
No. of positive reactors	37	that is	23·9 per cent.
No of pseudo-positive-reactors ..	3	,,	1·9 ,,
Total No of positive reactors ..	40	,,	25·8 ,,
No of negative reactors	114	,,	73·5 ,,
No. of pseudo-negative reactors..	1	,,	0·7 ,,
Total No. of negative reactors ..	115	,,	74·2 ,,

Princess Mary's Royal Air Force Nursing Service.

126. There were 45 admissions to hospital during 1926, 17 at home and 28 abroad, representing 1,219 days' sickness or an average duration per case of 27·1 days compared with 20·5 in 1925. The average number of days sickness per member of the service was 10 and the number sick daily 3·3. Malaria and dysentery accounted for the bulk of the medical non-effectiveness abroad and appendicitis at home. Nine members were operated on during the year, five for appendicitis and one each for cholecystitis, hypertrophied tonsils, mastoiditis and cellulitis.

127. The average strength of the service during 1926 was 119 ; 11 new members were appointed 19 serving members resigned and one was invalided for pulmonary tuberculosis No deaths occurred.

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Transfers of Casualties by Air.

128 In all R.A.F. commands the transfer of casualties by air continues to prove of the utmost value in those cases where a rapid means of evacuation or a journey as free from jarring and movement as possible is essential. In those commands, however, where the nature of the country frequently does not permit of any other method of transport than on foot, such as Iraq, the employment of aircraft as ambulances is in very many cases the only means of saving life. Medical officers are flown to the site of the casualty, or cases are collected and brought to hospital.

129. At present it is only in Iraq that this procedure is routine, although it is frequently adopted both in India and the Middle East. Air ambulances specially equipped and fitted for this purpose are stationed in Iraq, but are requisitioned for emergency cases only. Patients, whose transfer is not imperative, are evacuated by aircraft carrying out a routine communication trip. In Iraq during 1926, 82 patients were carried in air ambulances and 48 on aircraft carrying out a duty trip—a total of 130 as compared with 176 in 1925. The actual number of journeys and miles flown in evacuating casualties were 76 and 13,848 respectively.

Royal Air Force Reserve of Officers.

130. During 1926, 301 candidates for the Reserve of Officers were examined by the Central Medical Board of whom 243 were accepted as medically fit. The senior medical officer carried out 346 routine examinations of flying officers during their training and, estimating the standard of fitness by the 40 mm. test, the results showed that, compared with the Royal Air Force war-time standard, 49·1 per cent. of the officers of the reserve were above average, 41·6 per cent. were average and 9·3 per cent. were below average. The same pilots were further examined for visual efficiency and, employing the convergence and ocular muscle balance tests, it was found that 55·7 per cent. were very good ; 29·7 per cent. good ; 11·8 per cent. fair and 2.8 per cent. poor.

131. Ten cases of sickness of more than 48 hours' duration occurred among the 529 officers who underwent their annual training in 1926, and 15 flying accidents were notified. There were no fatal casualties and only three of the cases necessitated admission to hospital. The total number of days sickness was 112 and the sickness and injury figures as a whole show a very satisfactory standard of health, especially as the long courses of *ab inito* training were included for the first time in this period.

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Dental Treatment.

132. Table XXVIII, page 70, is a summary of the dental treatment carried out by R.A.F. dental surgeons during 1926 at home, in the Mediterranean Littoral and in Iraq. In India there are no R.A.F. dental surgeons and R.A.F. personnel are afforded dental treatment by the Army.

133. There was a slight increase in the number of both fillings and extractions compared with 1925, but the ratio between these two forms of treatment remained approximately the same. 470 patients were supplied with dentures from service and civilian sources compared with 540 in 1925.

Other Cases treated in certain R.A.F. Hospitals and Sick Quarters.

134. Cases other than R.A.F. personnel which were admitted to R.A.F. hospitals and sick quarters in Iraq and Palestine, where the Royal Air Force is responsible for medical attendance on all service personnel, are shown in table XXIX, page 70.

Surgical Operations.

135. Table XXX, page 71, gives the number of surgical operations carried out on R.A.F. personnel during 1926.

TABLE XIX.—RESULTS OF 672 EXAMINATIONS BY THE CENTRAL MEDICAL BOARD ON CANDIDATES FOR FLYING DUTIES.

Class of candidate.	Number accepted	Number rejected.		Total.	Percentage accepted
		Finally	Temporarily.		
Cadets	71	35	12	118	60
Airman pilots	63	58	4	125	50
Short service commissions	196	170	30	396	49
Fleet Air Arm	28	4	1	33	85
Total	358	267	47	672	53

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TABLE XX.—CANDIDATES FOR FLYING DUTIES.

Average physical efficiency tests and measurements recorded by the Central Medical Board.

——	Unit of measurement.	Class of candidate.				
		Cadets.	Short Service Commission officers.	Airman pilots.	Fleet Air Arm officers.	All classes.
Number accepted ..	—	61	167	63	28	319
Average age	Years.	18·3	22·2	22·9	24·1	21·8
Average results of tests.						
Standing height ..	Cms.	175·4	176·3	177·1	177·0	176·3
Weight ..	Kgms.	62·4	63·9	60·3	68·5	63·3
Chest ..	Cms.	85·6	86·4	85·4	89·9	86·3
Vital capacity	Cu. cms.	4,844	4,933	4,649	5,021	4,867
Breath-holding ..	seconds	86·1	79·1	84·1	89·5	82·4
Expiratory force ..	mm.hg.	133·4	136·7	139·9	131·1	136·2
Fatigue test	seconds	65·7	65·0	64·8	68·7	65·4
Systolic pressure ..	mm.hg.	130·6	131·7	129·7	128·0	130·8
Diastolic pressure ..	mm.hg.	77·6	79·5	80·0	79·6	79·2
Pulse rate :—						
Sitting ..	per min.	72·4	72·6	69·8	67·9	71·6
Standing..	per min.	77·3	79·1	76·7	74·5	77·9
After exercise ..	per min.	101·5	104·9	101·4	97·7	102·9
Time taken to return to normal ..	seconds	30·8	32·5	30·0	26·4	31·1

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TABLE XXI.—CAUSES OF REJECTION BY THE CENTRAL MEDICAL BOARD.

Class of candidate.	(1) Vision.		(2) Ear, nose, throat and teeth.		(3) Medical and and surgical.		(4) Defective physical efficiency.		Combinations of (1), (2), (3), with (4).		Total.	
	Temporarily.	Finally.	Temporarily.	Finally.	Temporarily.	Finally.	Temporarily.	Finally.	Temporarily.	Finally.	Temporarily.	Finally.
Permanent commissions	1	6	1	2	12	18	3	4	3	3	20	33
Short service commissions ..	5	63	3	1	8	24	3	43	11	39	30	170
Cadets	4	17	—	—	3	10	1	5	4	3	12	35
R.A.F. Reserve ..	—	17	2	2	4	9	4	15	2	3	12	46
Airman pilots ..	1	35	2	5	—	5	1	7	—	6	4	58
Auxiliary Air Force	1	3	—	1	—	1	—	2	—	—	1	7
Fleet Air Arm ..	—	3	—	—	—	—	1	1	—	—	1	4
Casuals	1	3	—	—	—	—	1	1	2	4	4	8
Total ..	13	147	8	11	27	67	14	78	22	58	84	361

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TABLE XXII.—PHYSICAL ASSESSMENT IN RESPECT OF AIR DUTIES OF 2,216 OFFICERS OF THE GENERAL DUTIES BRANCH.

——	Year.	Fit full flying.	Unfit full flying.	Total.	Percentage fit, full flying.
At home	1926	1,375	191	1,566	88
	1925	1,401	154	1,555	90
	1924	1,384	168	1,552	89
	1923	1,330	196	1,526	87
	1922	1,181	173	1,354	87
Abroad	1926	593	57	650	91
	1925	665	52	717	93
	1924	672	60	732	92
	1923	616	85	701	88
	1922	638	104	742	86
Total	1926	1,968	248	2,216	89
	1925	2,066	206	2,272	91
	1924	2,056	228	2,284	90
	1923	1,946	281	2,227	87
	1922	1,819	277	2,096	87

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TABLE XXIII.—RESULTS OF FURTHER TESTS OF OFFICERS OF THE GENERAL DUTIES BRANCH AND AIRMAN PILOTS.

Nature of test.	Officers.						Airman pilots, 215.		Total officers and airman pilots, 2,431.	
	Fit for flying duties, 1,968.		Unfit for flying duties, 248.		Total, 2,216.					
	Numbers.	Percentage.	Numbers.	Percentage.	Numbers.	Percentage.	Numbers.	Percentage.	Numbers.	Percentage.
Tremor—absent	908	46	92	37	1,000	45	118	55	1,118	46
,, present	1,060	54	156	63	1,216	55	97	45	1,313	54
Self-balancing, steady	1,867	95	204	82	2,071	93	213	99	2,284	94
,, ,, unsteady	101	5	44	18	145	7	2	1	147	6
Knee jerks—normal	1,742	89	198	80	1,940	88	183	85	2,123	87
,, ,, abnormal	226	11	50	20	276	12	32	15	308	13
Vision, 6/6 both eyes	1,881	96	191	77	2,072	93	209	97	2,281	94
,, 6/6 and 6/9 ; 6/9 and 6/9 ..	57	3	31	13	88	4	5	2	93	4
,, over 6/9 in either eye	30	1	26	10	56	3	1	1	57	2
Nasopharynx—normal	1,936	98	237	96	2,173	98	202	94	2,375	98
,, abnormal	32	2	11	4	43	2	13	6	56	2
Teeth—no treatment required	1,555	79	187	75	1,742	79	168	78	1,910	79
,, treatment required	413	21	61	25	474	21	47	22	521	21
Pyorrhœa—absent	1,954	99	240	97	2,194	99	210	98	2,404	99
,, present	14	1	8	3	22	1	5	2	27	1

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TABLE XXIV.—AVERAGE RESULTS OF TESTS OF 1,968 SERVING OFFICERS OF THE GENERAL DUTIES BRANCH AND 208 AIRMAN PILOTS FIT FOR FLYING DUTIES.

——	Age group.	No. examined.	Age.	Weight.	Time breath held.	Expiratory force.	Fatigue test.	Pulse rate per minute.			Time taken to return to normal.	Systolic pressure.	Pulse pressure.
								Sitting.	Standing.	After-exercise.			
OFFICERS.	Yrs.		Yrs.	Kgs.	Secs.	MM. Hg.	Secs.				Secs.	MM. Hg.	MM. Hg.
At home	Under 25 ..	435	21·5	66·7	79·0	147·2	63·3	72·4	78·7	101·2	24·2	124·8	46·4
	25–30 ..	542	27·6	67·4	76·4	155·1	62·0	72·7	78·8	100·8	24·3	124·4	45·0
	31 and over	398	34·0	69·7	73·4	157·1	59·9	73·6	79·1	101·8	25·1	124·6	44·5
	All ages ..	1,375	27·5	67·8	76·4	153·2	61·8	72·9	78·8	101·2	24·5	124·6	45·3
Abroad	Under 25 ..	143	22·7	67·6	76·6	146·7	61·7	71·7	80·5	102·1	20·8	123·5	43·6
	25–30 ..	286	27·3	68·4	75·5	153·1	63·4	73·0	80·9	102·9	20·6	123·2	43·2
	31 and over	164	33·7	67·3	72·0	146·1	58·7	72·6	79·9	101·3	20·2	123·3	42·6
	All ages ..	593	27·9	67·9	74·8	149·6	61·7	72·6	80·6	102·3	20·5	123·3	43·1
Total force ..	Under 25 ..	578	21·8	66·8	78·4	147·1	62·9	72·2	79·1	101·5	23·4	124·5	45·8
	25–30 ..	828	27·5	67·7	76·1	154·4	62·5	72·8	79·6	101·5	23·0	124·0	44·4
	31 and over	562	33·9	69·0	73·0	153·9	59·5	73·3	79·3	101·7	23·6	124·2	43·9
	All ages ..	1,968	27·6	67·9	75·9	152·1	61·8	72·8	79·4	101·6	23·3	124·2	44·7

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AIRMAN PILOTS.													
At home	Under 25 ..	92	22·6	63·5	76·2	134·4	61·0	74·6	81·5	104·9	22·9	128·2	49·0
	25–30 ..	69	26·1	66·6	78·3	142·6	62·2	75·8	82·8	104·3	24·2	129·8	48·3
	31 and over	—	—	—	—	—	—	—	—	—	—	—	—
	All ages ..	161	24·1	64·8	77·1	137·9	61·6	75·1	82·0	104·6	23·4	128·9	48·6
Abroad	Under 25 ..	11	22·8	66·7	77·1	145·7	59·0	77·5	88·3	109·1	23·2	128·9	49·8
	25–30 ..	32	26·1	67·3	74·6	158·7	61·2	73·5	80·2	105·0	20·8	127·4	44·6
	31 and over	4	31·0	60·9	63·5	152·5	52·8	79·5	84·0	105·0	22·5	127·2	42·0
	All ages ..	47	25·7	66·6	74·2	155·1	60·0	74·9	82·4	106·0	21·5	127·7	45·6
Total force ..	Under 25 ..	103	22·6	63·8	76·3	135·6	60·8	74·9	82·2	105·3	22·9	128·3	49·1
	25–30 ..	101	26·1	66·8	77·1	147·7	61·9	75·1	82·0	104·5	23·1	129·0	47·1
	31 and over	4	31·0	60·9	63·5	152·5	52·8	79·5	84·0	105·0	22·5	127·2	42·0
	All ages ..	208	24·5	65·2	76·5	141·8	61·2	75·1	82·1	104·9	23·0	128·6	47·9

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TABLE XXV.—REASONS OF UNFITNESS (TEMPORARY OR OTHERWISE) FOR FULL FLYING DUTIES OF 248 OFFICERS OF THE GENERAL DUTIES BRANCH.

Defect.	At home.	Abroad.	Total.
Vision	46	22	68
Ears or teeth	8	3	11
Medical	73	22	95
Surgical	51	6	57
D.P.E.	12	3	15
D.P.E. and vision	—	1	1
D.P.E. and ears or teeth ..	1	—	1
	191	57	248

TABLE XXVI.—RECRUITS—CAUSES OF REJECTION.

(1)	Loss or decay of many teeth	44
(2)	Deformities of feet	36
(3)	Diseases of heart (V.D.H., D.A.H.)	33
(4)	Poor physique	21
(5)	Diseases of lungs	19
(6)	Defects of vision	17
(7)	Diseases of ears (including deafness)	14
(8)	Diseases of nervous system	9
(9)	Other respiratory diseases	6
(10)	Defects of extremities	5
(11)	Venereal diseases	5
(12)	Affections of cutaneous system	5
(13)	Albuminuria	5
(14)	Diseases of veins (varix)	4
(15)	Hernia and bubonocele	4
(16)	Fits, or history of	3
(17)	Diseases of eyes and eyelids	3
(18)	Malformation of urinary organs	3
(19)	History of bed-wetting	3
(20)	Malformation of chest and spine	2
(21)	Other causes	17
		258

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TABLE XXVII.—SUMMARY OF LABORATORY WORK CARRIED OUT IN THE ROYAL AIR FORCE.

Nature of examinations.	United Kingdom.			Abroad.					Total.
				Hinaidi.					
	Central Laboratory	Cranwell.	Halton.	British.	Indian.	Basrah.	Mosul*	Palestine.	
Analyses—									
Fæces	21	3	12	13	—	—	—	1	50
Gastric	19	—	12	—	—	5	—	1	37
Urine	580	685	3,226	813	136	20	—	507	5,967
Food	34	—	—	—	—	7	—	15	56
Sewage	52	—	—	—	—	—	—	—	52
Water	196	—	—	—	—	10	—	58	264
Blood									
Agglutinations	114	2	92	34	—	38	—	5	285
Coagulation time	21	—	33	—	—	—	—	—	54
Counts	190	10	227	130	50	151	—	29	787
Cultures	103	3	12	84	—	20	—	5	227
Malaria parasites	153	15	172	547	427	4,194	—	130	5,638
Sugar	52	—	5	—	—	—	—	—	57
Urea	120	—	16	—	—	—	—	—	136
Van den Bergh	21	—	4	—	—	7	—	—	32
Wassermann	293	—	336	388	—	309	—	—	1,326
Cerebro-Spinal Fluid—									
Bio-chemical	8	—	5	—	—	1	—	—	14
Cell counts	7	—	5	2	—	—	—	—	14
Complement deviation	8	—	2	2	—	—	—	—	12
Cultures	7	—	3	2	—	—	—	—	12
Meningococcus	5	—	6	—	—	—	—	—	11
Tubercle bacillus	6	—	—	—	—	—	—	—	6
Fæces—									
Bacteria	341	—	174	520	7	237	—	194	1,473
Protozoa	404	22	565	1,408	74	499	—	560	3,532
Helminths	149	—	33	112	140	17	—	554	1,005
Pathological specimens	54	7	12	21	—	5	—	—	99
Peri-dental smears	24	—	2	—	—	—	—	—	26
Pus, Exudates, and Transudates—									
Biochemical	12	—	—	—	—	—	—	—	12
Cytological	17	—	24	—	—	—	—	—	41
Bacillus Ducrey	8	—	—	—	—	—	—	7	15
Gonococcus	53	453	667	384	251	63	—	249	2,120
Spironema	12	2	23	33	64	6	—	7	147
Pyogenic organisms	146	1	38	25	15	20	—	2	247
Leishmania	12	1	3	10	—	4	—	—	30
Renal efficiency tests	121	—	22	9	—	—	—	5	157
Sputa—									
General	95	3	130	12	41	17	—	25	323
Tubercle bacillus	123	131	277	158	128	290	—	55	1,162
Throat swabs	648	18	284	222	10	95	—	87	1,364
Vaccines—autogenous	102	—	39	25	—	9	—	21	196
Micellaneous	3,966	56	16	180	12	1,005	—	31	5,266
Total	8,297	1,412	6,477	5,134	1,355	7,029	—	2,548	32,252

* No return received.

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TABLE XXVIII.—DENTAL TREATMENT CARRIED OUT BY R.A.F. DENTAL SURGEONS.

Nature of treatment.	United Kingdom (average strength, 23,958).	Mediterranean Littoral (average strength, 3,528).	Iraq (average strength, 3,536).	Total (average strength, excluding India, 31,022).
Fillings	20,142	1,952	2,485	24,579
Scalings	2,757	659	1,248	4,664
Extractions	10,774	1,064	1,547	13,385
Root fillings	937	122	27	1,086
Number of dentures supplied	261	145	134	540
Number of personnel supplied with dentures ..	196	127	118	441
Number of repairs to dentures	61	44	109	214
Remodels..	97	92	52	241

TABLE XXIX.—PERSONNEL, OTHER THAN OF THE ROYAL AIR FORCE, TREATED IN CERTAIN R.A.F. HOSPITALS AND STATION SICK QUARTERS.

——	No. of admissions.	Deaths.	Average No. constantly sick.
IRAQ.			
British army troops	967	6	41·4
Indian troops	1,274	2	66·7
Indian followers	857	11	45·3
Royal Navy	13	—	0·8
All others	92	3	3·7
PALESTINE.			
British army troops	98	—	5·2
British gendarmerie			
Palestine and Transjordan Frontier Force.	37	—	1·0
All others	61	—	2·0

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TABLE XXX.—SURGICAL OPERATIONS PERFORMED ON R.A.F. PERSONNEL.

Nature of operation.	Place of operation.			Total.
	R.A.F. sick quarters.	R.A.F. hospitals.	Royal Navy, Army and other hospitals.	
Amputations	4	17	7	28
Appendicectomy	—	134	63	197
Other abdominal operations	—	8	6	14
Avulsion of nails	29	99	17	145
Circumcision	8	46	11	65
Evacuation of abscesses and boils	67	161	29	257
For hæmorrhoids	1	35	14	50
For hydrocele	—	3	4	7
For varicocele	—	13	4	17
For varix	—	21	9	30
Herniotomy	—	62	21	83
On ear and mastoid ..	—	4	—	4
On eyes	—	12	—	12
On joints	2	48	17	67
On nose	—	62	9	71
Reduction of fractures and dislocations	5	28	17	50
Removal of tonsils and adenoids	4	76	21	101
Removal of tumours, cysts, bursæ, etc.	9	63	12	84
Suture of wounds	6	15	10	31
Wiring or plating fractures	—	23	12	35
All other operations ..	2	47	16	65
Total ..	137	977	299	1,413

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AIR MINISTRY.

REPORT

ON THE

HEALTH OF THE ROYAL AIR FORCE

FOR THE YEAR

1927.

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REPORT

ON THE

HEALTH OF THE ROYAL AIR FORCE

FOR THE YEAR

1927.

The following Report on the Health of the Royal Air Force for the Year 1927 is issued for the information and guidance of all concerned.

By Command of the Air Council,

W. F. Nicholson

AIR MINISTRY,

Published September, 1928.

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To The Secretary of the Air Council.

SIR,

I have the honour to submit the accompanying report on the health of the Royal Air Force at home and abroad during the year 1927.

The report follows the same lines as in previous years, and aims at presenting as much information as is available and considered to be of practical interest, in tabular form with a few comments, summaries and explanatory notes where necessary in the text. Sickness figures are shown for the Fleet Air Arm as a whole at home and abroad, but separate from the remainder of the force, for the first time.

The programme of teaching at the new Medical Training Depôt, Halton, in its several departments, and a new scheme of instruction in sanitation for officers and airmen of the general duties branch are outlined under their respective headings in chapter IV.

The health of the force at home and abroad has been good, and the figures for sickness, death and invaliding incidence during 1927 compare very favourably with those of previous years.

Eighty-eight per cent. of the officers of the general duties branch who are called upon to fly were found to be fit for full flying duties, and the standard of fitness of both officers and airman pilots was shown by the routine physical efficiency tests to maintain its high level of previous years and to be well above the accepted standards.

I have the honour to be, Sir,
Your obedient Servant,

DAVID MUNRO,
Director of Medical Services,
Royal Air Force.

July, 1928.

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TABLE I.—SICKNESS AT HOME AND ABROAD—ANALYSED BY GEOGRAPHICAL AREAS.

Geographical Area.	Average strength.	Fresh cases of sickness.			Deaths.	Invalided out of service.	Invalided to United Kingdom.	Average duration of each case in days.		Average No. of days sickness per head.		Incidence per 1,000 of strength.						
		Less than 48 hours.	More than 48 hours.	Total.				48-hour cases included.	48-hour cases excluded.	48-hour cases included.	48-hour cases excluded.	Fresh cases of sickness.		Deaths.	Invalided out of service.	Invalided to United Kingdom.	No. sick daily.	
												48-hour cases included.	48-hour cases excluded.				48-hour cases included.	48-hour cases excluded.
United Kingdom—																		
1927..	21,254	5,049	7,796	12,845	72	163	—	12·5	19·7	7·6	7·2	604·4	366·8	3·4	7·7	—	20·8	19·7
(Excluding Fleet Air Arm.)																		
Average 1924-26	*23,452*	*8,902*	*8,775*	*17,677*	*80*	*231*	—	*9·4*	*17·5*	*7·1*	*6·6*	*753·8*	*374·2*	*3·4*	*9·8*	—	*19·5*	*18·1*
Average 1921-23	*21,083*	*10,107*	*7,883*	*17,990*	*64*	*310**	—	*8·9*	*18·7*	*7·6*	*7·0*	*853·2*	*373·9*	*3·1*	*14·7**	—	*20·8*	*19·1*
Fleet Air Arm Home and Abroad—																		
1927..	711	327	256	583	8	2	5	7·6	15·4	6·3	5·5	820·0	360·1	11·3	2·8	11·4†	17·3	15·1
Mediterranean Littoral—																		
1927..	3,296	1,845	2,367	4,212	15	24	93	11·5	19·4	14·7	13·9	1277·9	718·1	4·6	7·3	28·2	40·3	38·1
Average 1924-26	*3,550*	*2,037*	*1,691*	*3,728*	*21*	*18*	*59*	*9·5*	*19·3*	*10·0*	*9·2*	*1050·1*	*476·3*	*5·9*	*5·1*	*16·6*	*27·4*	*25·2*
Average 1921-23	*3,729*	*2,546*	*2,381*	*4,927*	*20*	*22*	*59*	*9·8*	*18·7*	*13·0*	*12·0*	*1321·3*	*638·7*	*5·3*	*5·8*	*15·7*	*35·3*	*32·7*
Iraq—																		
1927..	2,739	1,627	2,124	3,751	13	11	81	10·1	16·5	13·8	12·8	1369·5	775·5	4·7	4·0	29·6	37·8	35·1
Average 1924-26	*3,598*	*2,403*	*2,933*	*5,336*	*26*	*22*	*85*	*11·7*	*20·1*	*17·3*	*16·4*	*1483·0*	*815·2*	*7·2*	*6·1*	*23·6*	*47·4*	*44·9*
Average, 1921-23	*2,396*	*3,348*	*2,676*	*6,024*	*24*	*14*	*79*	*8·2*	*16·9*	*20·7*	*18·9*	*2514·6*	*1117·1*	*10·2*	*5·7*	*32·8*	*56·5*	*51·5*
India—																		
1927..	1,976	1,378	1,447	2,825	16	6	40	7·4	13·1	10·5	9·6	1429·1	731·8	8·1	3·0	20·2	28·8	26·3
Average 1924-26	*1,945*	*1,385*	*1,348*	*2,733*	*17*	*12*	*46*	*8·2*	*15·1*	*11·5*	*10·5*	*1405·1*	*693·1*	*8·7*	*6·2*	*23·6*	*31·5*	*28·8*
Average, 1921-23	*1,799*	*3,173*	*1,413*	*4,586*	*16*	*13*	*51*	*6·4*	*17·4*	*16·3*	*13·7*	*2549·0*	*785·4*	*9·1*	*7·2*	*28·5*	*44·5*	*37·3*
‡Total, Abroad—																		
1927..	8,158	4,953	6,041	10,994	46	41	217	9·9	16·8	13·4	12·5	1347·5	740·4	5·6	5·0	26·6	36·7	34·2
(Excluding Fleet Air Arm.)																		
Average 1924-26	*9,093*	*5,825*	*5,972*	*11,797*	*65*	*52*	*190*	*10·2*	*18·7*	*13·2*	*12·3*	*1297·4*	*656·8*	*7·1*	*5·7*	*20·9*	*36·2*	*33·7*
Average, 1921-23	*7,923*	*9,066*	*6,470*	*15,536*	*60*	*48*	*189*	*8·2*	*17·7*	*16·0*	*14·4*	*1960·8*	*816·6*	*7·6*	*6·1*	*23·8*	*43·7*	*39·5*
Total Force—																		
1927..	30,123	10,329	14,093	24,422	126	206	222	11·2	18·4	9·1	8·6	810·7	467·8	4·2	6·8	25·8†	24·9	23·6
Average 1924-26	*32,545*	*14,726*	*14,748*	*29,474*	*145*	*282*	*190*	*9·7*	*18·0*	*8·8*	*8·2*	*905·6*	*453·2*	*4·5*	*8·7*	*20·9†*	*24·1*	*22·5*
Average, 1921-23	*29,006*	*19,173*	*14,353*	*33,526*	*125*	*359**	*189*	*8·6*	*18·2*	*9·9*	*9·0*	*1115·8*	*494·8*	*4·3*	*12·3**	*23·8†*	*27·0*	*24·7*

NOTES:—* Excludes 711 invalids through Discharge Centre Medical Board during 1921. † Calculated on strength abroad.
‡ Includes sickness at China Stations. 206 cases, 2 deaths and 3 invalided to the United Kingdom.

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CHAPTER I.—THE HEALTH OF THE ROYAL AIR FORCE AS A WHOLE DURING 1927.

General.

1. The total sickness in the force as a whole during 1927 is analysed in table I, page viii, which includes for the purpose of comparison, the corresponding figures of the two preceding three-yearly periods.

2. A small change has been made this year in defining the geographical areas in that all units of the Fleet Air Arm are shown as a separate area, whereas in previous years these units were included under United Kingdom or total abroad, as appropriate. The term Mediterranean Littoral comprises Malta (average strength 305), Egypt and Palestine (2,739), and drafts *en route* to and from the United Kingdom (252). The sickness which occurred during 1927 in the force in China has been included in the total abroad and is detailed in a footnote to table I.

3. The average strength of the total force during 1927 was 30,123, and the total number of cases of sickness was 24,422, which is equivalent to a case incidence of 810·7 per 1,000 of strength compared with averages of 905·6 and 1,115·8 respectively during the two previous three-yearly periods. The number of sick daily, both including and excluding 48-hour cases, is slightly larger than during the previous three-yearly period, but smaller than that for the period 1921–23.

4. The total incidence of sickness at home is lower in 1927 than in 1926 and than the averages of the two previous three-yearly periods. The small outbreaks of rubella and scarlet fever in 1926 have disappeared, but are more than offset in 1927 by increases in the numbers of cases of influenza, malaria and diphtheria. Abroad, the incidence was slightly higher in 1927 than in 1926 and than the average of the three-yearly period 1924–26, but much lower than the average of 1921–23. There was no outstanding factor to account for this increase.

5. The average duration of each case at home admitted to hospital shows an increase over both previous three-yearly periods, 19·7 days compared with previous three-yearly averages of 17·5 and 18·7 days respectively, while abroad the average duration of each case is lower than either of the previous periods —16·8 days compared with 18·7 and 17·7.

6. Table II, page 9, analyses the sickness, deaths and final invalidings during the year by disease and injury groups. Of the total sickness for the year compared with 1926, malaria was responsible for fewer cases—8·7 per cent. in 1927 compared with 10·2 per cent. in 1926, or an incidence per 1,000 of 40·7 compared

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with 45·8, and influenza for more, 6·9 per cent. compared with 4·3 per cent., or an incidence of 32·4 per 1,000 compared with 19·1 in 1926. Forty-five deaths from disease and 81 from injury occurred during 1927 compared with 41 and 112 respectively in 1926. The causes of death from disease were as follows :—

Tuberculosis—Pulmonary, 7 Other, 2	9
Pneumonia	7
Typhoid fever	4
Appendicitis	3
Malaria	3
Septicæmia	4
Myocardial disease	3
Cerebral tumours	2
Carcinoma	1
Cerebral hæmorrhage	1
,, thrombosis	1
Encephalitis lethargica	1
Gastric ulcer	1
Glioma	1
Intestinal hæmorrhage	1
Poisoning	1
Pyæmia	1
Valvular disease of the heart	1

7. Two hundred and six cases were finally invalided, 185 for disease and 21 for injury, compared with 223 and 17 respectively in 1926. Five airmen included above were invalided with less than six months' service ; and, in addition, 49 time-expired airmen were found unfit for transfer to the reserve. The chief causes of invaliding during 1927 were as follows :—

Psychoneurosis	28
Tuberculosis—Pulmonary, 21 Other, 2	23
Chronic suppurative otitis media	17
Defective vision	16
Valvular disease of the heart	11
Mental diseases	8
Epilepsy	8

The same seven diseases headed the list of causes of invaliding in 1926.

8. The invaliding rate from commands abroad rose to 25·8 per 1,000 from averages of 20·9 and 23·8 respectively during the previous two three-yearly periods, and was mainly due to the increased invalidings from the Mediterranean Littoral, though each command abroad showed a slight increase over the corresponding figure for 1926. Twelve cases of typhoid from Egypt and seven cases of multiple peripheral neuritis from Aden accounted largely for the high rate shown by the Mediterranean Littoral.

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9. An analysis of the main disease and injury groups is given in table III, page 10. The case incidence of disease was higher in 1927 than during the period 1924–26, but lower than that in 1921–23, while that of injury was lower than during the period 1924–26 and higher than during 1921–23. The average duration of each case of disease was 17·7 in 1927, compared with 17·7 and 18·1 for the two previous three-yearly periods, while that of injury rose to 22·4 from 19·2 during the period 19–2123 and 20·0 during the period 1924–26. The average duration of each case of sickness, i.e., disease and injury, for the total force remains very constant—18·4 for 1927, 18·0 for 1924–26 and 18·2 for 1921–23.

Pulmonary Tuberculosis.

10. Table IV, page 11, analyses the 24 cases of pulmonary tuberculosis which occurred during 1927 by age group, trade, years of service and country where the disease was notified. In only two cases was a definite family history of tuberculosis obtained. Seven deaths occurred, of which three were 1926 cases; and 21 cases were finally invalided, of which eight had been notified in 1926.

The figures for the preceding year were :—Total number of cases notified, 36; 22 invalids, of which three were cases reported in 1925; and six deaths, two of which were 1925 cases.

Age Groups.

11. Table V, page 12, analyses by age groups the incidence of disease and injury during 1927, the sickness of officers being shown as a whole owing to their relatively small numbers. The largest age group for airmen remains 24–25 years, but the average age is older in 1927 than in 1926, 68 per cent. being under 26 years of age and 32 per cent. over in 1927, compared with 74 per cent. and 26 per cent. respectively in 1926. As in 1926, the incidence of injury is highest in the earlier age groups—18 to 27—of airmen and in the officer group, while the incidence of disease is more evenly distributed with a tendency to fall heavier, if anything, on the youngest group of airmen under 18 and the middle groups of 22–27 years. Both in disease and total disability the heaviest incidence is among the youngest group of airmen.

Venereal Disease.

12. Venereal disease at home and abroad is analysed in table VI, page 13. The incidence during 1927 of all types was 17·5, compared with 17·1 in 1926 and 36·1 in 1921. The average number of sick daily from this cause was 72·4, compared with 91·3 in 1926 and 146·4 in 1921, while the average duration of each case was 50·1 days. The average strengths in 1926 and 1921 were 32,985 and 28,322 respectively.

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Types of Unit.

13. An analysis of the sickness occurring in different types of unit at home and abroad is given in table VIII, page 16. The flying units, as in previous years, and as is to be expected owing to the necessarily higher standards of fitness demanded, show the lowest disease, injury and total disability incidence. It is of interest, however, to note that, including flying casualties which are peculiar to flying units, the incidence of injury in these units is lower than in either of the other groups of units.

Trade Groups.

14. The incidence of sickness, subdivided into injury and disease, which occurred in the various trade groups during 1927, is analysed in table IX, page 17. The figures for certain diseases which were selected as being responsible for the bulk of the medical non-effectiveness in the force are also given. As in 1926, the lowest sickness incidence was among aircraft apprentices and the highest among drivers. Officers, cadets and airman pilots showed the highest injury incidence, 96·0 per 1,000, and fitters the second highest, 93·7 per 1,000. With the exception of aircraft apprentices, the lowest disease incidence occurred in the officer group; drivers showed the highest disease incidence and the highest venereal disease rate.

Nosological Tables.

15. Table XII, page 20, is the main nosological table and analyses the diseases, injuries, deaths and invalids in the force at home, abroad, and as a whole. Table VII, page 14, analyses in greater detail certain diseases marked with an asterisk in table XII.

16. The main object of table VII is to indicate the relative incidence of tropical diseases in the commands abroad. The Fleet Air Arm and the force in China are too small numerically to justify separate figures, and they have therefore been included in the total force. The total figures for the Mediterranean Littoral for 1927 are not strictly comparable with those for previous years owing to the inclusion of Aden and the exclusion of units of the Fleet Air Arm for the first time. A comparison of the incidence of dysentery, malaria and sandfly fever in the Mediterranean Littoral is possible for the separate commands in this area, the figures for which are given in table XVII of chapter III. In Iraq, the incidence of dysentery has fallen from 26·3 per 1,000 to 14·6, and of malaria from 187·2 to 80·7; that of typhoid fever has risen from 5·4 to 9·9 and is commented on in chapter IV, while those of paratyphoid and sandfly fever remain the same. In India, the incidence of dysentery fell from

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15·8 in 1926 to 14·7 in 1927, of malaria from 330·1 to 284·4, and of sandfly fever from 45·8 to 43·0; that of typhoid fever rose from 0·5 to 1·5, while that of paratyphoid remained the same, 0·5.

17. In table XII, the Fleet Air Arm is included in the home and abroad figures, as appropriate.

18. The incidence per 1,000 of diseases caused by infection rose at home from 153·5 in 1926 to 172·5 in 1927, but fell slightly abroad from 443·6 to 439·0, while those of the remaining groups of diseases showed very little variation compared with 1926.

The incidence of all diseases at home rose from 273·3 per 1,000 in 1926 to 301·0 per 1,000 in 1927, and abroad remained practically the same at 635 per 1,000; while the incidence of injury fell at home from 72·4 to 65·6, and abroad from 89·1 to 86·2 per 1,000.

The figures for the average duration of each case of injury, disease and all disabilities for the total force during 1927 were 22·4, 17·7 and 18·4 days compared with the corresponding figures 20·4, 18·2 and 18·5 days in 1926.

Under the heading, "No appreciable disease," are shown all cases, except mental and epileptic, which were admitted to hospital for observation, and in which no confirmation of disease or injury was made.

Fleet Air Arm.

19. The average stength of the Fleet Air Arm at home and abroad during 1927 was 711, and the total number of cases which were admitted to hospital was 256, representing an incidence per 1,000 of 360·1. A further 327 cases received treatment in hospital, sick bay or sick quarters of less than 48 hours' duration; if these be included the total sickness incidence becomes 820·0 per 1,000. Eight deaths occurred, seven as the results of flying accidents and one by suicide, while two cases were finally invalided out of the service.

Injury.

20. Table X, page 18, analyses all cases of injury which occurred during 1927. The table shows the actual numbers of injured and of deaths according to the cause of the accident and the nature of the injury, with a further sub-division into injuries sustained on duty and those which were the results of accidents off duty. In the accidents caused by athletics the injury has been considered to be on duty or off duty according to whether it occurred during an organised or unorganised game. Cases of heatstroke, sunstroke and heat exhaustion have been excluded as not strictly coming under the heading of injury for the purpose of this table. Ten cases of symptoms due to the effects of heat were recorded, but only one of these was considered to be due to

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heat hyper-pyrexia. This case was reported in Iraq, and ended in death from pneumonia and other complications resulting from diminished resistance due to heat hyper-pyrexia. Twelve cases of injury to feet by ill-fitting boots have also been excluded, as they were not the results of accidents in the sense in which this term is used in these paragraphs.

21. The total number of cases of injury during 1927 was 2,129, equivalent to an incidence per 1,000 for the total force of 70·6 compared with 76·3 in 1926. Fifty-six per cent. of all cases occurred on duty, compared with 60 per cent. in 1926.

22. The commonest site of injury was the lower extremity. It is worthy of note that since 1921 the cases in which injury to the lower limb was the cause of non-effectiveness have only varied from 47 to 50 per cent of the total number of injuries, with never more than a 2 per cent. variation from one year to the next. For the last three years in succession the percentage has been 48.

23. Flying accidents in 1927 accounted for 6·4 per cent. of the total injuries, compared with 7·1 per cent. in 1926, 6·9 per cent. in 1925, and 9·5 per cent. in 1924. Of the deaths from injury, about 69 per cent. occurred on duty during 1927 compared with 78 per cent. in 1926, and 70 per cent. were due to flying accidents compared with 73 per cent. in 1926.

24. *Injuries sustained in flying accidents.*—Table XI, page 19, analyses the flying accidents on duty which occurred during 1927 and includes the corresponding figures for 1926 and 1925 for purposes of comparison. During 1927 there were fewer casualties in flying than in any one year since 1923, and considering the number of aircraft hours flown per accident resulting in death or injury, the casualty risk was the lowest recorded since the commencement of these reports. The percentage of deaths to all casualties in flying accidents on duty was 39 in 1927, compared with 44 in 1926 and 35 in 1925, All the officers injured in flying accidents belonged to the general duties branch, while among airmen, 17 casualties resulting in 4 deaths occurred among airman pilots either qualified or under training, and 37, resulting in 14 deaths, among airmen not qualified as or under training for airmen pilots. The distribution by trade group of the 37 casualties referred to above was fitters 11, carpenters 10, wireless operators six, metal workers five, aircraft hands four, air gunners one.

25. *Injuries caused by airscrews.*—Twenty-eight cases of injury due to airscrews were reported in 1927 compared with 29 in 1926. One injury occurred off duty and four resulted from personnel being struck by the blades when not actually swinging the airscrew. There were no deaths and three invalids from this cause.

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26. *Injuries sustained while starting engines.*—Forty-seven cases occurred during 1927, compared with 47 in 1926, 43 in 1925, and 54 in 1924. The injury in almost every case was due to a "back-fire"; there were no deaths nor invalids, and the average duration of each case was 33 days. These figures are exclusive of those for injuries sustained while starting aircraft engines by swinging airscrews, which have been included in the figures given in the preceding paragraph.

27. *Injuries caused by motor vehicles (other than by starting engines).*—A total of 424 cases of injury from this cause was reported during 1927, compared with 493 in 1926; the number of cases on duty were 41 and 73 respectively. There were 10 deaths and six invalids, all of which were due to injuries sustained in motor accidents off duty. The cases may be grouped as follows:—

(i) *Motor cycles.*—Three hundred and thirty-one cases, of which 308 (resulting in eight deaths and six invalids) occurred off duty, 18 cases on duty, and five cases in which on or off duty was not stated, were reported during the year and accounted (as in 1926) for 80 per cent. of motor accidents and 16 per cent. of all accidents.

(ii) *Occupants of lorries and tenders.*—Injuries from this cause showed a much lower figure than in 1926; 20 cases, all on duty, with no deaths nor invalids, compared with 43 cases and one death on duty and four cases, no deaths, off duty.

(iii) *Occupants of motor cars.*—Thirty-eight cases, all off duty and resulting in two deaths, occurred during 1927, compared with 28 cases and no deaths in 1926.

(iv) *Non-occupants of vehicles.*—Thirty-five cases were reported of which two were caused by R.A.F. transport, 21 by civilian vehicles, and in 12 cases details of the ownership of the vehicle were not given. Three of the cases occurred on duty and there were no deaths nor invalids.

28. *Injuries sustained in athletics.*—Eight hundred and fifty-eight cases, equivalent to an incidence of 28·5 per 1,000, compared with 28·7 in 1926 and 25·8 in 1925, were reported during the year. There were four deaths, one in an organised game and three off duty, compared with one death off duty in 1926. The three deaths off duty were due to drowning and occurred on leave, while the death on duty was occasioned by a fall from a horse. Of the total number of cases, 702 were reported as having occurred on duty, 117 off duty, and in 39 cases no information was available on the point. Football, as in previous years, accounted for most of the injuries under this heading, 66 per cent.; 512 cases occurred on duty and 52 off duty. The most frequent injuries were sprain or injury to ankle, 113 cases, and acute synovitis of the knee, 143 cases.

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29. *Wounds in action.*—Two cases were reported of injuries sustained from rifle fire while flying. Both cases recovered.

30. *Accidental gunshot wounds.*—There were 10 cases with no deaths due to this cause in 1927, compared with 14 and two deaths in 1926.

31. *Injuries sustained during parachute descents.*—Twelve cases were reported during the year, of which one proved fatal.

32. *Injuries caused by animals.*—Eleven cases were reported during 1927; five were caused by dog bites, five by cat bites, and one by a scorpion bite. There were no deaths and no invalids.

33. *Injuries sustained in workshops.*—Fifty-seven cases, resulting in three invalids from the service, occurred in 1927.

34. *Other injuries sustained on duty.*—One hundred and ninety-one cases, resulting in one death and one invalid, were reported during the year. The average duration of each case was 22 days.

35. *Other injuries sustained off duty or on leave.*—There were 278 cases of injury off duty and 62 on leave, including five cases of suicide, during 1927. Nine deaths occurred, including the five cases of suicide, and one case was invalided from the service. In addition to the five cases of suicide by self-inflicted wounds, a further suicide by drinking lysol was recorded. The average duration of each case was 17 days.

36. *Other injuries for which complete details were not available.*—Twenty-four cases coming under this heading occurred during the year and have not been included in the preceding analyses.

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TABLE II.—SICKNESS, DEATHS AND INVALIDS.

Disease Group.	1927.			Percentage of Total.								
				Cases.			Deaths.			Invalids.		
	Cases.	Deaths.	Invalids.	1927.	1924-5-6.	1921-2-3.	1927.	1924-5-6.	1921-2-3.	1927.	1924-5-6.	1921-2-3.
Dysentery	105	—	—	0·7	*1·2*	*1·5*	—	*0·2*	*0·5*	—	—	*0.3*
Enteric group ..	42	4	—	0·3	*0·2*	*0·2*	3·2	*2·8*	*1·6*	—	—	—
Influenza	976	—	—	6·9	*6·5*	*5·1*	—	—	*0·3*	—	—	—
Malaria	1,225	3	1	8·7	*8·4*	*6·0*	2·4	*1·2*	*0·8*	0·5	*0·1*	*0·2*
Pneumonia ..	67	7	—	0·5	*0·4*	*0·5*	5·5	*3·0*	*7·0*	—	—	—
Pyrexia of unknown origin	48	—	—	0·3	*0·4*	*0·9*	—	—	*0·3*	—	—	—
Tuberculosis ..	29	9	23	0·2	*0·3*	*0·4*	7·1	*3·5*	*3·2*	11·2	*13·9*	*13·7*
Venereal diseases ..	528	—	1	3·8	*4·3*	*6·0*	—	—	—	0·5	*0·8*	*1·0*
Pyæmia and septicæmia	5	4	—	0·0	*0·0*	*0·0*	3·2	*1·2*	*3·2*	—	—	—
Other diseases due to infection	4,463	1	7	31·7	*31·5*	*34·3*	0·8	*1·2*	*2·1*	3·4	*2·0*	*1·5*
Contacts and carriers	50	—	—	0·4	*0·2*	*0·5*	—	—	—	—	—	*0·1*
Nervous system and brain	280	4	54	2·0	*1·8*	*2·1*	3·2	*2·5*	*1·6*	25·7	*25·5*	*23·8*
Eye	162	—	22	1·2	*1·0*	*1·2*	—	—	—	10·6	*8·5*	*7·8*
Ear and nose ..	258	—	21	1·9	*1·9*	*1·8*	—	—	—	10·2	*12·7*	*11·2*
Circulatory system	145	4	23	1·0	*1·0*	*1·4*	3·2	*2·3*	*2·9*	11·2	*5·4*	*9·4*
Lymphatic system ..	16	—	2	0·1	*0·1*	*0·1*	—	—	*0·3*	1·0	*0·7*	*1·2*
Respiratory system (excluding tuberculosis and pneumonia)	427	—	5	3·0	*3·0*	*2·7*	—	*1·2*	*0·8*	2·4	*4·7*	*3·8*
Teeth and gums ..	96	—	—	0·7	*0·6*	*0·7*	—	—	—	—	*0·2*	*0·2*
Digestive system ..	1,279	6	4	9·1	*7·7*	*7·4*	4·7	*5·5*	*4·8*	1·9	*3·6*	*3·7*
Disorders of nutrition and metabolism	3	—	1	0·0	*0·1*	*0·0*	—	*0·4*	—	0·5	*0·8*	*0·4*
Generative system ..	283	—	—	2·0	*1·8*	*1·5*	—	—	—	—	*0·1*	*0·2*
Organs of locomotion	366	—	14	2·6	*3·1*	*2·7*	—	—	—	6·8	*10·4*	*11·9*
Areolar tissue and skin	777	—	2	5·5	*5·9*	*6·9*	—	—	—	1·0	*0·4*	*1·7*
Urinary organs ..	86	—	4	0·6	*0·6*	*0·5*	—	*0·4*	*0·8*	1·9	*2·6*	*3·2*
Tumours and cysts	74	2	—	0·5	*0·6*	*0·5*	1·6	*1·4*	*1·1*	—	*0·4*	*0·6*
Poisons	34	1	—	0·2	*0·3*	*0·3*	0·8	*0·4*	*1·1*	—	—	*0·1*
Debility	47	—	—	0·3	*0·4*	*0·7*	—	—	—	—	*0·4*	*0·3*
Other diseases ..	71	—	1	0·5	*0·7*	*0·9*	—	—	—	0·5	—	*0·1*
Total: All diseases	11,942	45	185	84·7	*84·0*	*86·8*	35·7	*27·2*	*32·4*	89·3	*93·2*	*96·4*
Total: All injuries	2,151	81	21	15·3	*16·0*	*13·2*	64·3	*72·8*	*67·6*	10·7	*6·8*	*3·6*
Total: All disabilities	14,093	126	206	100·0	*100·0*	*100·0*	100·0	*100·0*	*100·0*	100·0	*100·0*	*100·0*

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29. *Wounds in action.*—Two cases were reported of injuries sustained from rifle fire while flying. Both cases recovered.

30. *Accidental gunshot wounds.*—There were 10 cases with no deaths due to this cause in 1927, compared with 14 and two deaths in 1926.

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35. *Other injuries sustained off duty or on leave.*—There were 278 cases of injury off duty and 62 on leave, including five cases of suicide, during 1927. Nine deaths occurred, including the five cases of suicide, and one case was invalided from the service. In addition to the five cases of suicide by self-inflicted wounds, a further suicide by drinking lysol was recorded. The average duration of each case was 17 days.

36. *Other injuries for which complete details were not available.*—Twenty-four cases coming under this heading occurred during the year and have not been included in the preceding analyses.

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TABLE II.—SICKNESS, DEATHS AND INVALIDS.

Disease Group.	1927.			Percentage of Total.								
				Cases.			Deaths.			Invalids.		
	Cases.	Deaths.	Invalids.	1927.	1924-5-6.	1921-2-3.	1927.	1924-5-6.	1921-2-3.	1927.	1924-5-6.	1921-2-3.
Dysentery	105	—	—	0·7	*1·2*	*1·5*	—	*0·2*	*0·5*	—	—	*0.3*
Enteric group ..	42	4	—	0·3	*0·2*	*0·2*	3·2	*2·8*	*1·6*	—	—	—
Influenza	976	—	—	6·9	*6·5*	*5·1*	—	—	*0·3*	—	—	—
Malaria	1,225	3	1	8·7	*8·4*	*6·0*	2·4	*1·2*	*0·8*	0·5	*0·1*	*0·2*
Pneumonia ..	67	7	—	0·5	*0·4*	*0·5*	5·5	*3·0*	*7·0*	—	—	—
Pyrexia of unknown origin	48	—	—	0·3	*0·4*	*0·9*	—	—	*0·3*	—	—	—
Tuberculosis ..	29	9	23	0·2	*0·3*	*0·4*	7·1	*3·5*	*3·2*	11·2	*13·9*	*13·7*
Venereal diseases ..	528	—	1	3·8	*4·3*	*6·0*	—	—	—	0·5	*0·8*	*1·0*
Pyæmia and septicæmia	5	4	—	0·0	*0·0*	*0·0*	3·2	*1·2*	*3·2*	—	—	—
Other diseases due to infection	4,463	1	7	31·7	*31·5*	*34·3*	0·8	*1·2*	*2·1*	3·4	*2·0*	*1·5*
Contacts and carriers	50	—	—	0·4	*0·2*	*0·5*	—	—	—	—	—	*0·1*
Nervous system and brain	280	4	54	2·0	*1·8*	*2·1*	3·2	*2·5*	*1·6*	25·7	*25·5*	*23·8*
Eye	162	—	22	1·2	*1·0*	*1·2*	—	—	—	10·6	*8·5*	*7·8*
Ear and nose ..	258	—	21	1·9	*1·9*	*1·8*	—	—	—	10·2	*12·7*	*11·2*
Circulatory system	145	4	23	1·0	*1·0*	*1·4*	3·2	*2·3*	*2·9*	11·2	*5·4*	*9·4*
Lymphatic system..	16	—	2	0·1	*0·1*	*0·1*	—	—	*0·3*	1·0	*0·7*	*1·2*
Respiratory system (excluding tuberculosis and pneumonia)	427	—	5	3·0	*3·0*	*2·7*	—	*1·2*	*0·8*	2·4	*4·7*	*3·8*
Teeth and gums ..	96	—	—	0·7	*0·6*	*0·7*	—	—	—	—	*0·2*	*0·2*
Digestive system ..	1,279	6	4	9·1	*7·7*	*7·4*	4·7	*5·5*	*4·8*	1·9	*3·6*	*3·7*
Disorders of nutrition and metabolism	3	—	1	0·0	*0·1*	*0·0*	—	*0·4*	—	0·5	*0·8*	*0·4*
Generative system..	283	—	—	2·0	*1·8*	*1·5*	—	—	—	—	*0·1*	*0·2*
Organs of locomotion	366	—	14	2·6	*3·1*	*2·7*	—	—	—	6·8	*10·4*	*11·9*
Areolar tissue and skin	777	—	2	5·5	*5·9*	*6·9*	—	—	—	1·0	*0·4*	*1·7*
Urinary organs ..	86	—	4	0·6	*0·6*	*0·5*	—	*0·4*	*0·8*	1·9	*2·6*	*3·2*
Tumours and cysts	74	2	—	0·5	*0·6*	*0·5*	1·6	*1·4*	*1·1*	—	*0·4*	*0·6*
Poisons	34	1	—	0·2	*0·3*	*0·3*	0·8	*0·4*	*1·1*	—	—	*0·1*
Debility	47	—	—	0·3	*0·4*	*0·7*	—	—	—	—	*0·4*	*0·3*
Other diseases ..	71	—	1	0·5	*0·7*	*0·9*	—	—	—	0·5	—	*0·1*
Total: All diseases	11,942	45	185	84·7	*84·0*	*86·8*	35·7	*27·2*	*32·4*	89·3	*93·2*	*96·4*
Total: All injuries	2,151	81	21	15·3	*16·0*	*13·2*	64·3	*72·8*	*67·6*	10·7	*6·8*	*3·6*
Total: All disabilities	14,093	126	206	100·0	*100·0*	*100·0*	100·0	*100·0*	*100·0*	100·0	*100·0*	*100·0*

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TABLE III.—SICKNESS AT HOME AND ABROAD, ANALYSED BY DISEASE AND INJURY GROUPS.

Disease group.	Case incidence per 1,000 of strength.									Average duration of each case (days).								
	Home.			Abroad.			Total Force.			Home.			Abroad.			Total Force.		
	Average 1921–23.	Average 1924–26.	1927.	Average 1921–23.	Average 1924–26.	1927.	Average 1921–23.	Average 1924–26.	1927.	Average 1921–23.	Average 1924–26.	1927.	Average 1921–23.	Average 1924–26.	1927.	Average 1921–23.	Average 1924–26.	1927.
Diseases caused by infection ..	171·5	178·3	172·5	539·0	404·9	439·0	272·0	241·6	248·6	18·2	15·4	15·2	15·6	16·1	14·0	16·8	15·7	14·6
Contacts and carriers	2·7	0·9	2·0	1·1	0·6	0·8	2·2	0·8	1·7	10·9	9·9	21·3	16·8	18·9	13·7	11·7	11·7	20·2
Effects of parasites	0·6	0·5	0·6	1·1	3·7	2·6	0·8	1·4	1·2	5·6	14·7	16·0	8·6	26·0	30·5	6·7	23·2	25·1
Diseases of nervous system and brain	9·4	6·9	7·0	13·3	10·8	15·0	10·4	8·0	9·3	29·7	33·8	35·2	52·4	57·2	51·4	37·6	42·7	42·7
Diseases of the eye	5·8	4·1	5·3	6·1	5·0	5·6	5·9	4·4	5·4	18·6	18·5	23·4	32·7	32·2	29·9	22·6	22·9	25·3
Diseases of the ear and nose ..	8·6	7·2	4·9	9·5	11·5	17·7	8·9	8·4	8·6	20·8	21·3	22·3	21·9	27·6	17·6	21·1	23·7	19·5
Diseases of the circulatory system	5·3	3·4	3·8	11·2	7·3	7·3	6·9	4·5	4·8	23·9	30·1	44·2	48·7	41·9	37·1	34·9	35·4	41·1
Diseases of the lymphatic and ductless glands	0·3	0·3	0·5	0·3	0·2	0·6	0·3	0·3	0·5	45·6	34·6	37·5	53·1	41·3	102·2	47·8	36·2	57·7
Diseases of the respiratory system	12·3	13·2	12·7	16·5	14·8	17·9	13·5	13·6	14·2	16·9	17·2	18·7	21·3	18·1	19·1	18·4	17·5	18·8
Diseases of the teeth and gums ..	3·0	2·7	3·3	4·3	2·3	3·0	3·4	2·6	3·2	10·0	8·9	11·5	9·4	12·6	7·7	9·8	9·8	10·5
Diseases due to disorders of nutrition or metabolism	0·1	0·2	0·1	—	0·3	0·1	0·1	0·3	0·1	30·0	28·4	34·0	—	40·6	11·0	30·0	32·6	26·3
Diseases of the digestive system	28·7	31·2	36·7	57·3	45·2	56·9	36·5	35·1	42·4	21·1	20·3	22·4	16·8	19·6	19·3	19·3	20·0	21·2
Diseases of the generative system	6·6	6·4	7·6	10·2	13·1	14·0	7·6	8·2	9·4	18·1	21·8	25·3	18·7	23·0	17·6	18·3	22·3	22·0
Diseases of the organs of locomotion	12·9	13·1	11·1	14·5	16·8	14·7	13·3	14·2	12·2	18·1	18·2	24·9	20·5	19·3	20·3	18·8	18·6	23·3
Diseases of the areolar tissue and skin	37·8	28·5	26·3	25·5	22·0	24·4	34·4	26·7	25·8	16·5	15·9	21·2	15·8	17·9	15·7	16·3	16·4	19·7
Diseases of the urinary organs ..	2·5	2·0	2·1	3·1	3·8	4·8	2·7	2·5	2·9	32·3	27·8	31·2	46·7	38·6	28·0	36·8	32·4	29·7
Tumours and cysts	2·5	2·8	2·2	2·3	3·1	3·1	2·4	2·9	2·5	18·4	18·0	18·0	27·1	18·6	29·3	20·6	18·2	22·1
Poisons	1·2	0·5	0·4	2·8	4·3	2·9	1·7.	1·6	1·1	6·3	9·7	8·7	12·3	13·6	13·2	9·1	12·7	12·0
All other diseases	5·3	2·8	1·9	10·8	5·6	4·8	6·8	3·6	2·8	10·9	13·5	12·5	22·1	18·9	11·1	15·7	15·8	11·8
Total, all diseases	317·0	304·9	301·0	729·2	575·4	635·1	429·6	380·4	396·4	18·5	17·1	18·6	17·6	18·5	16·6	18·1	17·7	17·7
General injuries	4·6	5·9	7·9	20·2	11·0	9·4	8·9	7·3	8·3	17·1	17·4	23·6	12·3	22·9	13·3	14·1	19·7	20·3
Local injuries	52·3	63·3	57·7	67·1	70·4	76·8	56·3	65·3	63·2	19·7	19·9	24·8	20·4	20·3	18·6	20·0	20·0	22·6
Total, all injuries	56·9	69·3	65·6	87·3	81·4	86·2	65·2	72·6	71·5	19·5	19·7	24·7	18·5	20·6	18·0	19·2	20·0	22·4
Total, all disabilities	373·9	374·2	366·6	816·6	656·8	721·3	494·8	453·1	467·8	18·7	17·5	19·7	17·7	18·7	16·8	18·2	18·0	18·4

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TABLE IV.—PULMONARY TUBERCULOSIS.

Age.	No. of cases.			Trade group.	No. of cases.	Years of service.	No. of cases.	Locality.	No. of cases.
	Home.	Abroad.	Total.						
Under 18 ..	1	—	1	Officers.	2	Under 1	2	Home	16
18 and 19 ..	1	—	1	Aircraft-	9	year.		Iraq	1
20 and 21 ..	2	—	2	hands.		1–2 years	1	India	3
22 and 23 ..	2	3	5	Aircraft	1	2–4 years	4	Egypt	4
24 and 25 ..	1	2	3	apprenti-		4–8 years	10		
26 and 27 ..	—	1	1	ces.		Over 8	7		
28 and 29 ..	2	—	2	Clerks.	1	years.			
30 and 31 ..	2	—	2	Drivers.	3				
32 and 33 ..	1	—	1	Metal	1				
34 and 35 ..	—	—	—	workers.					
36 and 37 ..	—	—	—	Carpen-	1				
38 and 39 ..	1	1	2	ters and					
40 and 41 ..	1	—	1	riggers.					
42	2	1	3	Fitters.	2				
				Other	4				
				skilled					
				trades.					
	16	8	24		24		24		24

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TABLE V.—DISEASE AND INJURY ANALYSED BY AGE GROUPS.

Age last birthday.	Average strength.			Case incidence per 1,000 of strength.								
				Disease.			Injury.			All disabilities.		
	Home.	Abroad.	Total.	Home.	Abroad.	Total.	Home.	Abroad.	Total.	Home.	Abroad.	Total.
Airmen—												
Under 18 ..	1,923	—	1,923	504·4	—	504·4	64·5	—	64·5	568·9	—	568·9
18 and 19..	2,853	54	2,907	304·6	*	304·1	76·8	*	77·1	381·4	*	381·2
20 and 21..	2,829	1,191	4,020	293·4	643·2	397·0	76·0	92·4	80·8	369·4	735·6	477·8
22 and 23..	2,436	1,878	4,314	306·2	633·1	448·5	65·3	92·7	77·2	371·5	725·8	525·7
24 and 25..	3,431	1,742	5,173	274·8	666·5	406·7	62·4	87·8	71·0	337·2	754·3	477·7
26 and 27..	2,172	1,156	3,328	290·1	732·7	443·8	58·0	86·5	67·9	348·1	819·2	511·7
28 and 29..	1,050	499	1,549	211·4	653·3	353·8	37·1	66·1	46·5	248·6	719·5	400·3
30 to 34 ..	1,531	714	2,245	205·1	553·2	315·8	45·1	67·2	52·1	250·2	620·4	367·9
35 to 39 ..	617	269	886	231·8	698·9	373·6	37·3	74·3	48·5	269·0	773·2	422·1
40 and over	367	109	476	258·9	825·7	388·7	27·2	36·7	29·4	286·1	862·4	418·1
Total airmen ..	19,209	7,612	26,821	300·0	653·8	400·4	62·4	85·0	68·8	362·3	738·8	469·2
Total officers and cadets	2,317	985	3,302	309·9	490·4	363·7	92·4	95·4	93·3	402·2	585·8	457·0
Total: all ranks..	21,526	8,597	30,123	301·0	635·1	396·4	65·6	86·2	71·5	366·6	721·3	467·8

* Not calculated.

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Table VI.—Venereal Disease.

Disease.	Home.				Abroad.				Total Force.			
	No. of cases.	Case incidence per 1,000 of strength	Average.		No. of cases.	Case incidence per 1,000 of strength	Average.		No. of cases.	Case incidence per 1,000 of strength	Average.	
			No. sick daily.	Duration of case (days).			No. sick daily.	Duration of case (days).			No. sick daily.	Duration of case (days).
Gonorrhœa—acute ..	195	9·1	33·5	62·6	159	18·5	22·5	51·7	354	11·8	56·0	57·7
relapse ..	37	1·7	4·6	45·5	29	3·4	3·2	40·1	66	2·2	7·8	43·2
Total ..	232	10·8	38·1	59·9	188	21·9	25·7	49·9	420	13·9	63·8	55·4
Syphilis—admissions :												
Primary	26	1·2	2·0	28·0	20	2·3	1·6	29·3	46	1·5	3·6	28·6
For further treatment	—	—	—	—	—	—	—	—	—	—	—	—
Total	26	1·2	2·0	28·0	20	2·3	1·6	29·3	46	1·5	3·6	28·6
Soft chancre	11	0·5	0·7	24·6	51	5·9	4·3	30·7	62	2·1	5·0	29·7
Total, Venereal disease 1927	269	12·5	40·8	55·4	259	30·1	31·6	44·6	528	17·5	72·4	50·1
1926	357	14·9	59·5	60·8	208	23·0	31·8	55·9	565	17·1	91·3	59·0
1925	400	16·8	57·0	52·0	256	27·9	36·4	51·9	656	19·9	93·4	51·9
1924	432	19·2	59·3	50·3	272	30·0	44·0	59·2	704	22·3	103·3	53·8
1923	482	23·8	64·8	49·1	299	31·4	42·3	51·7	781	26·2	107·2	50·1
1922	525	24·9	76·1	52·9	263	33·5	34·4	47·7	788	27·2	110·5	51·2
1921	709	32·3	94·2	48·5	314	49·2	52·2	60·7	1,023	36·1	146·4	52·2

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TABLE VII.—DETAILED NOSOLOGICAL TABLE OF

Disease.	Home. Average strength, 21,526.				Mediterranean Littoral. Average strength, 3,296.			
	No. of cases.	Case incidence per 1,000 of strength.	Average.		No. of cases.	Case incidence per 1,000 of strength.	Average.	
			No. sick daily	Duration of case.			No. sick daily	Duration of case.
Diseases caused by Infection.				Days.				Days.
Dysentery—								
Clinical, primary ..	1	0·0	0·0	14·0	4	1·2	0·2	22·5
,, recurrent ..	—	—	—	—	—	—	—	—
Bacillary, primary ..	—	—	—	—	5	1·5	0·3	24·2
,, recurrent ..	—	—	—	—	—	—	—	—
Amœbic, primary ..	—	—	0·6	—	12	3·6	2·5	75·2
,, recurrent ..	7	0·3	0·9	49·0	5	1·5	0·7	53·6
Total—Dysentery ..	8	0·4	1·7	75·6	26	7·9	3·8	53·2
Enteric Group—								
Typhoid fever	—	—	—	—	6	1·8	0·9	53·3
Paratyphoid fever, A & B	1	0·0	0·0	4·0	1	0·3	0·1	21·0
Enteritis	92	4·3	1·9	7·7	123	37·3	2·9	8·7
Influenza	786	36·5	17·5	8·1	60	18·2	1·4	8·8
Malaria—								
Clinical, primary.. ..	1	0·0	0·0	6·0	38	11·5	1·3	12·9
,, recurrent ..	11	0·5	0·5	15·9	37	11·2	1·3	12·8
Benign tertian, primary..	—	—	—	—	115	34·9	3·3	10·4
,, ,, recurrent	130	6·1	7·0	19·5	102	30·9	4·6	16·4
Quartan, primary and recurrent	—	—	—	—	3	0·9	0·1	16·3
Malignant tertian, primary	—	—	—	—	2	0·6	0·1	13·5
,, ,, recurrent	2	0·1	0·0	4·5	1	0·3	0·0	7·0
Cachexia	—	—	—	—	—	—	—	—
Total—Malaria	144	6·7	7·5	18·9	298	90·4	10·7	13·1
Pyrexia of unknown origin..	13	0·6	0·3	8·8	24	7·3	0·7	10·0
Sandfly fever	1	0·0	0·0	4·0	149	45·2	3·0	7·4
Tuberculosis	19	0·9	5·7	110·2	5	1·5	2·1	150·2
Upper air passage infections	1,519	70·6	34·8	8·4	281	85·3	5·6	7·3
Venereal disease	269	12·5	40·8	55·4	114	34·6	16·4	52·6
Other diseases caused by infection	861	40·0	44·5	18·8	191	57·9	10·1	19·3
Total—All diseases caused by infection ..	3,713	172·5	154·5	15·2	1,278	387·7	57·7	16·5
All other diseases ..	2,767	128·5	175·6	23·2	768	233·0	50·9	24·2
Total—All diseases ..	6,480	301·0	330·2	18 6	2,046	620·8	108·6	19·4
Injuries—								
General injuries	169	7·9	10·9	23·6	30	9·1	1·5	18·4
Local injuries	1,242	57·7	84·5	24·8	291	88·3	15·4	19·3
Total—All injuries ..	1,411	65·6	95·4	24·7	321	97·4	16·9	19·2
Total—All disabilities..	7,891	366·6	425·6	19·7	2,367	718·1	125·5	19·4

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Diseases caused by Infection.

Iraq. Average strength, 2,739.				India. Average strength. 1,976.				Total Force. Average strength, 30,123.			
No. of cases	Case incidence per 1,000 of strength.	Average.		No. of cases	Case incidence per 1,000 of strength.	Average.		No. of cases.	Case incidence per 1,000 of strength.	Average.	
		No. sick daily.	Duration of case.			No. sick daily	Duration of case.			No. sick daily	Duration of case.
			Days.				Days.				Days.
11	4·0	0·5	17·9	2	1·0	0·2	40·0	19	0·6	1·1	21·0
4	1·5	0·2	13·7	1	0·5	0·1	42·0	5	0·2	0·3	19·4
5	1·8	1·1	78·2	13	6·6	0·7	20·2	23	0·8	2·1	33·7
1	0·4	0·1	46·0	3	1·5	0·3	32·0	4	0·1	0·4	35·5
16	5 8	1·1	24·6	6	3·0	0·4	23·0	34	1·1	4·5	48·2
3	1·1	0·4	49·0	4	2 0	0·5	44·0	20	0·7	2·9	52·6
40	14·6	3·5	30·7	29	14·7	2·2	27·4	105	3·5	11·4	39·5
27	9·9	4·9	66·6	3	1·5	1·2	141·7	36	1·2	7·0	70·7
3	1·1	0·7	86·3	1	0·5	0·1	35·0	6	0·2	0·9	53·2
124	45·3	2·6	7·7	54	27·3	1·1	7·1	412	13·7	9·1	8·1
115	42·0	2·6	8·1	14	7·1	0·3	6·6	976	32·4	21·8	8·1
4	1·5	0·1	13·5	24	12·1	0·6	8·7	67	2·3	2·0	11·4
24	8·8	0·4	6·5	17	8·6	0·3	7·1	89	3·0	2·5	10·4
68	24·8	1·8	9·9	213	107·8	4·2	7·3	396	13·3	9·5	8·6
120	43·8	3·7	11·2	265	134·1	4·9	6·7	617	20·3	19·9	11·9
—	—	—	—	1	0·5	0·0	5·0	4	0·1	0·1	13·5
3	1·1	0·4	43·0	22	11·1	0·6	10·8	27	0·9	1·1	14·6
2	0·7	0·0	3·5	18	9·1	0·4	8·9	23	0·8	0·5	8·0
—	—	—	—	2	1·0	0·5	90·5	2	0·1	0·5	90·5
221	80·7	6·5	10·7	562	284·4	11·6	7·6	1,225	40·7	36·3	10·8
3	1·1	0·1	9·7	1	0·5	0·0	9·0	48	1·6	1·3	9·5
428	156·3	9·1	7·7	85	43·0	1·7	7·1	667	22·1	13·9	7·6
2	0·7	0·5	88·5	3	1·5	0·7	87·7	29	1·0	9·0	113·3
184	67·2	4·4	8·7	100	50·6	1·9	7·3	2,131	70·7	47·6	8·2
82	29·9	8·7	38·8	36	18·2	4·8	48·4	528	17·5	72·4	50·1
179	65·4	10·4	21·1	66	33·4	3·5	19·7	1,325	44·0	69·3	19·1
1,408	514·1	53·7	13·9	954	482·3	29·0	11·1	7,488	248·6	299·7	14·6
483	176·0	30·7	23·2	346	175·1	15·8	16·6	4,454	147·8	278·6	22·8
1,891	690·0	84·4	16·3	1,300	657·4	44·8	12·6	11,942	396·4	578·3	17·7
21	7·7	0·8	14·1	21	10·6	0·5	8·8	250	8·3	13·9	20·3
212	77·8	10·6	18·2	126	63·8	6·6	19·0	1,901	63·2	118·1	22·6
233	85·4	11·4	17·8	147	74·4	7·1	17·5	2,151	71·5	131·9	22·4
2,124	775·5	95·9	16·5	1,447	731·8	51·8	13·1	14,093	467·8	710·2	18·4

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TABLE VIII.—SICKNESS IN DIFFERENT TYPES OF UNIT

Type of Unit.	——	Home.					Abroad.					Total.				
		Incidence per 1,000 of strength.				Average duration of case. (days.)	Incidence per 1,000 of strength.				Average duration of case. (days.)	Incidence per 1,000 of strength.				Average duration of case. (days.)
		Cases.	Deaths.	Invalided out of service.	No. sick daily.		Cases.	Deaths.	Invalided out of service.	No. sick daily.		Cases.	Deaths.	Invalided out of service.	No. sick daily.	
Flying units ..	Disease	195·4	0·4	3·9	9·3	17·4	573·1	2·6	4·2	27·1	17·2	291·5	1·0	4·0	13·8	17·3
	Injury	59·0	3·4	1·0	4·0	24·5	91·7	5·5	1·0	4·6	18·3	67·4	3·9	1·0	4·1	22·3
	Total	254·4	3·8	4·9	13·3	19·0	664·8	8·1	5·2	31·7	17·4	358·9	4·9	5·0	17·9	18·3
Depôts (store and repair), ground schools and armoured car companies	Disease	438·8	1·6	6·1	22·1	18·4	621·0	1·9	2·9	26·5	15·6	505·6	1·7	4·9	23·7	17·1
	Injury	76·3	1·1	0·3	5·6	26·8	75·9	1·3	0·8	3·7	18·0	76·1	1·2	0·5	4·9	23·6
	Total	515·1	2·7	6·4	27·7	19·6	696·9	3·2	3·7	30·2	15·8	581·7	2·9	5·4	28·6	18·0
Miscellaneous units, Headquarters, personnel depôts, etc.	Disease	376·5	2·1	17·4	21·4	20·7	911·2	4·8	6·7	43·9	17·6	489·5	2·6	15·1	26·1	19·5
	Injury	66·5	1·5	0·3	3·8	21·1	103·1	3·8	—	4·8	17·1	74·3	2·0	0·2	4·1	19·9
	Total	443·0	3·6	17·7	25·2	20·8	1014·3	8·6	6·7	48·7	17·5	563·8	4·6	15·3	30·2	19·6
Total	Disease	301·0	1·1	7·0	15·3	18·6	635·1	2·6	4·0	28·9	16·6	396·4	1·5	6·1	19·2	17·7
	Injury	65·6	2·4	0·7	4·4	24·7	86·2	3·5	0·8	4·3	18·0	71·5	2·7	0·7	4·4	22·4
	Total	366·6	3·5	7·7	19·7	19·7	721·3	6·1	4·8	33·2	16·8	467·8	4·2	6·8	23·6	18·4

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TABLE IX.—INCIDENCE OF CERTAIN DISEASES IN THE VARIOUS TRADE GROUPS.

Trade group.	Incidence per 1,000 of strength.								
	Influenza	Upper air passage infections.	Venereal diseases.	Respiratory diseases.	Digestive diseases.	All other diseases.	All diseases.	All injuries.	All disabilities
Aircrafthands	33·1	79·4	28·9	15·1	42·0	210·7	409·2	60·6	469·9
Aircraft apprentices ..	7·7	104·2	—	7·4	48·8	172·9	340·9	43·8	384·8
Carpenters and riggers ..	28·9	69·5	14·0	15·9	38·4	218·4	385·0	71·4	456·4
Clerks	42·1	59·2	13·0	19·9	41·8	232·6	408·6	57·2	465·8
Drivers	29·8	47·1	31·2	13·1	46·6	294·2	462·0	81·1	543·1
Fitters	26·6	64·5	16·4	10·5	38·6	246·0	402·6	93·7	496·3
Metal workers	37·8	70·3	16·5	10·4	43·0	224·8	402·8	86·4	489·1
Officers, cadets and airman pilots	55·8	75·9	4·2	13·3	43·0	155·5	353·0	96·0	449·0
Other skilled trades.. ..	27·0	54·9	26·7	20·3	43·4	238·0	412·9	58·6	471·5
Total force	32·4	70·7	17·5	14·2	42·4	219·1	396·4	71·5	467·8

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TABLE X.—INJURIES.

—	Number of cases.							
	Airscrews.	Athletics.	Flying.	Motor transport.	Starting motor engines.	Other causes.	Total.	Percentage of total cases.
On duty	27	702	133	41	35	266	1,204	56
Off duty	1	117	4	378	6	343	849	40
Not stated	—	39	—	5	—	32	76	4
Total	28	858	137	424	41	641	2,129	100
Nature of injury :								
General	2	6	90	90	—	52	240	11
Head or face ..	1	73	28	126	—	119	347	16
Trunk	1	53	5	15	2	34	110	5
Upper extremity .	18	130	5	73	36	158	420	20
Lower extremity .	6	596	9	120	3	278	1,012	48
Total	28	858	137	424	41	641	2,129	100
Deaths :								
On duty	—	1	52	—	—	2	55	69
Off duty	—	3	3	10	—	9	25	31
Total	—	4	55	10	—	11	80	100

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TABLE XI.—FLYING CASUALTIES ON DUTY.

Rank.	Number of casualties.		
	1925.	1926.	1927.
Officers.			
Killed	*41*	*47*	32
Injured	*58*	*55*	44
Cadets.			
Killed	—	*2*	2
Injured	*1*	*5*	1
Airmen.			
Killed	*13*	*29*	18
Injured	*42*	*41*	36
Total, all ranks.			
Killed	*54*	*78*	52
Injured	*101*	*101*	81
Total	*155*	*179*	133
Deaths as a percentage of total flying casualties ..	*35*	*44*	39
Average duration of each case (days) :—			
Deaths included	*29*	*27*	27
Deaths excluded	*45*	*48*	45

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TABLE XII.—NOSOLOGICAL TABLE FOR HOME, ABROAD, AND TOTAL FORCE, 1927.

Disease.	Home. Average strength, 21,526.						Abroad. Average strength, 8,597.							Total Force. Average strength, 30,123.					
	No. of cases.	No. of deaths.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages.		No. of cases.	No. of deaths.	No. invalided to United Kingdom.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages.		No. of cases.	No. of deaths.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages.	
					No. sick daily.	Duration of case.						No. sick daily.	Duration of case.					No. sick daily.	Duration of case.
Disease caused by infection.						Days.							Days.						Days.
Diphtheria	34	—	—	1·6	4·8	51·4	3	—	—	—	0·3	0·2	28·0	37	—	—	1·2	5·0	49·5
*Dysentery	8	—	—	0·4	1·7	75·6	97	—	11	—	11·3	9·7	36·4	105	—	—	3·5	11·4	39·5
*Enteric group	1	—	—	0·0	0·0	4·0	41	4	20	—	4·8	7·8	69·7	42	4	—	1·4	7·8	68·2
*Enteritis (acute) and gastro-enteritis (acute)	92	—	—	4·3	1·9	7·7	320	—	—	—	37·2	7·2	8·2	412	—	—	13·7	9·1	8·1
*Influenza (including influenzal pneumonia) ..	786	—	—	36·5	17·5	8·1	190	—	—	—	22·1	4·3	8·2	976	—	—	32·4	21·8	8·1
Leishmaniasis	11	—	—	0·5	1·2	41·4	15	—	—	—	1·7	1·1	26·7	26	—	—	0·9	2·3	32·9
*Malaria	144	—	—	6·7	7·5	18·9	1,081	3	11	1	125·7	28·8	9·7	1,225	3	1	40·7	36·3	10·8
Measles	7	—	—	0·3	0·4	20·4	—	—	—	—	—	—	—	7	—	—	0·2	0·4	20·4
Mumps	97	—	—	4·5	5·3	20·0	2	—	—	—	0·2	0·1	22·0	99	—	—	3·3	5·4	20·0
Pneumonia	37	6	—	1·7	3·5	34·2	30	1	3	—	3·5	3·7	44·6	67	7	—	2·2	7·1	38·9
*Pyrexia of unknown origin	13	—	—	0·6	0·3	8·8	35	—	—	—	4·1	0·9	9·8	48	—	—	1·6	1·3	9·5
Rheumatism (acute) ..	19	—	—	0·9	2·2	41·6	10	—	4	—	1·2	2·7	98·5	29	—	—	1·0	4·9	61·2
Rubella	5	—	—	0·2	0·2	14·4	—	—	—	—	—	—	—	5	—	—	0·2	0·2	14·4
*Sandfly fever	1	—	—	0·0	0·0	4·0	666	—	—	—	77·5	13·8	7·6	667	—	—	22·1	13·9	7·6
Scarlet fever	20	—	—	0·9	3·3	60·4	5	—	—	—	0·6	0·6	41·0	25	—	—	0·8	3·9	56·5
Tuberculosis.																			
Respiratory	16	5	15	0·7	3·3	75·1	8	2	6	6	0·9	3·0	135·1	24	7	21	0·8	6·3	95·1
Other	3	1	2	0·1	2·4	297·3	2	1	1	—	0·2	0·3	55·0	5	2	2	0·2	2·7	200·4
*TOTAL—TUBERCULOSIS	19	6	17	0·9	5·7	110·2	10	3	7	6	1·2	3·3	119·1	29	9	23	1·0	9·0	113·3

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Acute upper air passage infections.																		
Laryngitis	23	—	—	1·1	0·6	9·6	8	—	—	—	0·9	0·4	20·5	31	—	—	1·0	1·1	12·4
Pharyngitis and naso-pharyngitis	1,005	—	—	46·7	21·5	7·8	336	—	—	—	39·1	5·9	6·4	1,341	—	—	44·5	27·4	7·5
Rhinitis, acute catarrhal	60	—	—	2·8	1·0	6·1	28	—	—	—	3·3	0·5	6·2	88	—	—	2·9	1·5	6·2
Tonsillitis (including quinsy and Vincent's Angina)	431	—	—	20·0	11·7	9·9	240	—	—	—	27·9	6·0	9·1	671	—	—	22·3	17·7	9·6
*TOTAL—UPPER AIR PASSAGE INFECTIONS ..	1,519	—	—	70·6	34·8	8·4	612	—	—	—	71·2	12·8	7·6	2,131	—	—	70·7	47·6	8·2
Vaccinia	107	—	—	5·0	2·1	7·1	—	—	—	—	—	—	—	107	—	—	3·6	2·1	7·1
Venereal disease.																			
Gonorrhœa	232	—	—	10·8	38·1	59·9	188	—	2	—	21·9	25·7	49·9	420	—	—	13·9	63·8	55·4
Syphilis	26	—	1	1·2	2·0	28·0	20	—	—	—	2·3	1·6	29·3	46	—	1	1·5	3·6	28·6
Soft chancre	11	—	—	0·5	0·7	24·6	51	—	—	—	5·9	4·3	30·7	62	—	—	2·1	5·0	29·7
*TOTAL—VENEREAL DISEASES	269	—	1	12·5	40·8	55·4	259	—	2	—	30·1	31·6	44·6	528	—	1	17·5	72·4	50·1
Abscess, hand and finger	26	—	—	1·2	1·1	15·2	21	—	—	—	2·4	1·1	19·0	47	—	—	1·6	2·2	16·9
Abscess, other	52	—	—	2·4	3·0	20·8	21	—	—	1	2·4	1·1	18·8	73	—	1	2·4	4·0	20·2
Boils	103	—	—	4·8	3·1	11·0	81	—	2	—	9·4	3·1	13·9	184	—	—	6·1	6·2	12·3
Carbuncles	21	—	—	1·0	0·5	9·1	2	—	—	—	0·2	0·1	14·0	23	—	—	0·8	0·6	9·6
Cellulitis	249	—	—	11·6	8·3	12·1	213	—	1	—	24·8	7·4	12·8	462	—	—	15·3	15·7	12·4
Lymphadenitis and lymphangitis	35	—	—	1·6	1·7	17·4	29	—	—	—	3·4	0·8	9·8	64	—	—	2·1	2·4	14·0
Osteo-myelitis, periostitis and osteitis	12	—	4	0·6	1·1	33·6	1	—	1	—	0·1	1·8	661·0	13	—	4	0·4	2·9	81·8
Pyæmia, septicæmia ..	3	2	—	0·1	0·3	41·3	2	2	—	—	0·2	0·1	12·0	5	4	—	0·2	0·4	29·6
Ulcer	6	—	—	0·3	0·3	16·8	5	—	—	—	0·6	0·2	11·0	11	—	—	0·4	0·4	14·2
Other diseases caused by infection	17	1	2	0·8	2·2	46·6	24	—	—	—	2·8	0·9	13·5	41	1	2	1·4	3·1	27·2
*TOTAL—DISEASES CAUSED BY INFECTION ..	3,713	15	24	172·5	154·5	15·2	3,775	13	62	8	439·0	145·1	14·0	7,488	28	32	248·6	299·7	14·6

* Analysed in further detail in Table VII.

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TABLE XII.—NOSOLOGICAL TABLE FOR HOME, ABROAD, AND TOTAL FORCE, 1927.—*continued*.

Disease.	Home. Average strength, 21,526.						Abroad. Average strength, 8,597.							Total Force. Average strength, 30,123.					
	No. of cases.	No. of deaths.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages.		No. of cases.	No. of deaths.	No. invalided to United Kingdom.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages.		No. of cases.	No. of deaths.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages.	
					No. sick daily.	Duration of case.						No. sick daily.	Duration of case.					No. sick daily.	Duration of case.
						Days.							Days.						Days.
Contacts and carriers ..	43	—	—	2·0	2·5	21·3	7	—	—	—	0·8	0·3	13·7	50	—	—	1·7	2·8	20·2
Effects of parasites ..	13	—	—	0·6	0·6	16·0	22	—	1	—	2·6	1·8	30·5	35	—	—	1·2	2·4	25·1
Other diseases classified by systems. Diseases of nervous system and brain.																			
Neuritis	26	—	—	1·2	3·1	43·0	23	—	9	—	2·7	4·5	71·0	49	—	—	1·6	7·5	56·2
Nerve paralysis	5	—	—	0·2	0·5	36·0	—	—	—	—	—	—	—	5	—	—	0·2	0·5	36·0
Epilepsy (including observation cases)	10	—	6	0·5	1·0	35·8	3	—	2	2	0·3	0·9	105·3	13	—	8	0·4	1·8	51·8
Psychoneurosis	56	—	24	2·6	4·7	30·5	51	—	30	4	5·9	7·6	54·6	107	—	28	3·6	12·3	42·0
Mental diseases (including observation cases) ..	6	—	3	0·3	1·5	89·3	7	—	5	5	0·8	2·5	128·4	13	—	8	0·4	3·9	110·4
Other diseases of nervous system	48	4	9	2·2	3·8	29·3	45	—	5	1	5·2	2·7	22·1	93	4	10	3·1	6·5	25·8
TOTAL—DISEASES OF NERVOUS SYSTEM AND BRAIN	151	4	42	7·0	14·5	35·2	129	—	51	12	15·0	18·2	51·4	280	4	54	9·3	32·6	42·7

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Diseases of the Eye.																			
Infectious	65	—	2	3·0	4·1	23·0	33	—	1	—	3·8	1·8	19·9	98	—	2	3·3	5·9	21·9
Other diseases of the eye	49	—	16	2·3	3·2	23·9	15	—	10	4	1·7	2·1	51·9	64	—	20	2·1	5·3	30·5
TOTAL—DISEASES OF THE EYE	114	—	18	5·3	7·3	23·4	48	—	11	4	5·6	3·9	29·9	162	—	22	5·4	11 2	25·3
Diseases of ear and nose.																			
Otitis media, acute ..	13	—	—	0·6	0·6	16·0	31	—	1	—	3·6	1·3	15·0	44	—	—	1·5	1·8	15·3
Otitis media, chronic ..	29	—	15	1·3	2·4	29·8	19	—	7	2	2·2	2·2	41·6	48	—	17	1·6	4·5	34·5
Other diseases of ear and nose	64	—	4	3·0	3·5	20·2	102	—	2	—	11·9	3·9	13·9	166	—	4	5·5	7·4	16·3
TOTAL—DISEASES OF EAR AND NOSE	106	—	19	4·9	6·5	22·3	152	—	10	2	17·7	7·3	17·6	258	—	21	8·6	13·8	19·5
Diseases of the circulatory system.																			
Endocarditis, acute ..	—	—	1	—	0·2	—	—	—	—	—	—	—	—	—	—	1	—	0·2	—
Valvular disease of the heart	14	—	11	0·7	2·7	70·7	3	1	2	—	0·3	0·5	62·3	17	1	11	0·6	3·2	69·2
Disease of myocardium ..	5	—	—	0·2	0·4	26·2	4	3	2	—	0·5	0·6	59·2	9	3	—	0·3	1·0	40·9
Disordered action of the heart	27	—	4	1·3	2·5	34·1	33	—	11	1	3·8	3·5	38·3	60	—	5	2·0	6·0	36·4
Varix	25	—	3	1·2	1·8	26·9	6	—	—	—	0·7	0·4	25·8	31	—	3	1·0	2·3	26·7
Other diseases of the circulatory system ..	11	—	1	0·5	2·3	75·0	17	—	3	2	2·0	1·3	28·9	28	—	3	0·9	3·6	47·0
TOTAL—DISEASES OF THE CIRCULATORY SYSTEM	82	—	20	3·8	9·9	44·2	63	4	18	3	7·3	6·4	37·1	145	4	23	4·8	16·3	41·1
Diseases of lymphatic system and ductless glands	11	—	2	0·5	1·1	37·5	5	—	3	—	0·6	1·4	102·2	16	—	2	0·5	2·5	57·7

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TABLE XII.—NOSOLOGICAL TABLE FOR HOME, ABROAD, AND TOTAL FORCE, 1927.—*continued.*

Disease.	Home. Average strength, 21,526.						Abroad. Average strength, 8,597.							Total Force. Average strength, 30,123.					
	No. of cases.	No. of deaths.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages.		No. of cases.	No. of deaths.	No. invalided to United Kingdom.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages.		No. of cases.	No. of deaths.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages.	
					No. sick daily.	Duration of case.						No. sick daily.	Duration of case.					No. sick daily.	Duration of case.
						Days.							Days.						Days.
Diseases of the Respiratory system. (*a*)																			
Bronchitis	84	—	3	3·9	5·2	22·4	47	—	3	—	5·5	3·1	24·0	131	—	3	4·3	8·3	23·0
Tracheitis	142	—	—	6·6	3·0	7·6	70	—	—	—	8·1	1·6	8·5	212	—	—	7·0	4·6	7·9
Asthma	3	—	—	0·1	0·7	80·3	15	—	2	—	1·7	0·7	17·1	18	—	—	0·6	1·4	27·7
Pleurisy	38	—	—	1·8	4·2	40·4	16	—	1	—	1·9	1·1	24·8	54	—	—	1·8	5·3	35·8
Other diseases of the respiratory system ..	6	—	1	0·3	1·0	59·8	6	—	5	1	0·7	1·5	92·8	12	—	2	0·4	2·5	76·3
TOTAL—DISEASES OF THE RESPIRATORY SYSTEM	273	—	4	12·7	14·0	18·7	154	—	11	1	17·9	8·0	19·1	427	—	5	14·2	22·0	18·8
Disease of teeth and gums	70	—	—	3·3	2·2	11·5	26	—	—	—	3·0	0·5	7·7	96	—	—	3·2	2·8	10·5
Diseases of the Digestive System (excluding tonsillitis).																			
Hypertrophy of tonsils ..	103	1	—	4·8	7·3	25·9	14	—	—	—	1·6	0·6	15·1	117	1	—	3·9	7·9	24·6
Gastritis, acute	50	—	—	2·3	2·6	19·3	18	—	1	—	2·1	1·0	20·1	68	—	—	2·3	3·6	19·5
Gastritis, chronic ..	11	—	—	0·5	1·2	41·0	3	—	1	—	0·3	0·4	48·3	14	—	—	0·5	1·6	42·6

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Dyspepsia	136	—	—	6·3	2·7	7·3	73	—	—	—	8·5	1·5	7·6	209	—	—	6·9	4·2	7·4
Appendicitis	199	—	—	9·2	15·5	28·5	62	3	2	—	7·2	6·3	37·0	261	3	—	8·7	21·8	30·5
Hernia	50	—	—	2·3	4·9	35·6	28	—	—	—	3·3	3·3	42·4	78	—	—	2·6	8·1	38·1
Constipation	56	—	—	2·6	1·3	8·5	65	—	—	—	7·6	1·2	6·6	121	—	—	4·0	2·5	7·5
Colic	23	—	—	1·1	0·5	7·9	22	—	—	—	2·6	0·4	7·2	45	—	—	1·5	0·9	7·5
Hæmorrhoids	52	—	—	2·4	2·8	19·9	40	—	1	—	4·5	2·2	20·2	92	—	—	3·0	5·0	20·1
Jaundice	18	—	—	0·8	1·4	27·6	71	—	—	—	8·3	3·5	18·0	89	—	—	3·0	4·9	20·0
Other diseases of the digestive system	91	2	4	4·2	8·1	32·6	94	—	6	—	10·9	5·5	21·3	185	2	4	6·1	13·6	26·9
TOTAL—DISEASES OF THE DIGESTIVE SYSTEM ..	789	3	4	36·7	48·5	22·4	490	3	11	—	56·9	25·8	19·3	1,279	6	4	42·4	74·3	21·2
Diseases due to disorders of nutrition or metabolism	2	—	1	0·1	0·2	34·0	1	—	—	—	0·1	0·0	11·0	3	—	1	0·1	0·2	26·3
Diseases of the Generative System.																			
Phimosis	35	—	—	1·6	2·4	24·9	20	—	—	—	2·3	1·0	17·5	55	—	—	1·8	3·4	22·3
Balanitis	9	—	—	0·4	0·5	18·7	14	—	—	—	1·6	0·4	10·7	23	—	—	0·8	0·9	13·8
Urethritis	68	—	—	3·2	5·3	28·6	56	—	—	—	6·5	3·1	19·9	124	—	—	4·1	8·4	24·7
Varicocele	13	—	—	0·6	1·0	27·2	6	—	—	—	0·7	0·5	28·0	19	—	—	0·6	1·4	27·5
Hydrocele	4	—	—	0·2	0·5	47·2	1	—	—	—	0·1	0·0	12·0	5	—	—	0·2	0·6	40·2
Epididimitis	4	—	—	0·2	0·4	35·5	5	—	—	—	0·6	0·3	21·0	9	—	—	0·3	0·7	27·4
Other diseases of the generative system	30	—	—	1·4	1·3	15·3	18	—	—	—	2·1	0·6	11·6	48	—	—	1·6	1·8	13·9
TOTAL—DISEASES OF THE GENERATIVE SYSTEM	163	—	—	7·6	11·3	25·3	120	—	—	—	14·0	5·8	17·6	283	—	—	9·4	17·1	22·0

(*a*) Excluding pneumonia and tuberculosis, for which *see* p. 20.

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TABLE XII.—NOSOLOGICAL TABLE FOR HOME, ABROAD, AND TOTAL FORCE, 1927.—*continued.*

Disease.	Home. Average strength, 21,526.						Abroad. Average strength, 8,597.							Total Force. Average strength, 30,123.					
	No. of cases.	No. of deaths.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages.		No. of cases.	No. of deaths.	No. invalided to United Kingdom.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages.		No. of cases.	No. of deaths.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages.	
					No. sick daily.	Duration of case.						No. sick daily.	Duration of case.					No. sick daily.	Duration of case.
						Days.							Days.						Days.
Diseases of Organs of Locomotion.																			
Diseases of the bone ..	6	—	1	0·3	1·4	86·8	1	—	1	—	0·1	0·1	48·0	7	—	1	0·2	1·6	81·3
Diseases of the joints ..	63	—	4	2·9	6·1	35·2	28	—	4	2	3·3	3·1	39·9	91	—	6	3·0	9·1	36·6
Myalgia and lumbago ..	107	—	1	5·0	3·7	12·7	63	—	1	—	7·3	2·0	11·6	170	—	1	5·6	5·7	12·3
Diseases of muscles, tendons and bursæ ..	28	—	—	1·3	1·6	21·2	21	—	—	—	2·4	0·7	12·3	49	—	—	1·6	2·3	17·4
Deformities of limbs ..	36	—	5	1·7	3·5	35·5	13	—	3	1	1·5	1·1	30·5	49	—	6	1·6	4·6	34·2
TOTAL—DISEASES OF ORGANS OF LOCOMOTION	240	—	11	11·1	16·4	24·9	126	—	9	3	14·7	7·0	20·3	366	—	14	12·2	23·4	23·3
Diseases of Areolar Tissue or Skin.																			
Impetigo	217	—	—	10·1	12·0	20·2	69	—	—	—	8·0	2·2	11·9	286	—	—	9·5	14·3	18·2
Scabies	88	—	—	4·1	3·3	13·8	7	—	—	—	0·8	0·2	10·9	95	—	—	3·2	3·5	13·6
Dermatitis	30	—	—	1·4	2·3	27·9	25	—	—	—	2·9	1·1	16·4	55	—	—	1·8	3·4	22·6
Urticaria	17	—	—	0·8	0·6	12·1	11	—	—	—	1·3	0·3	8·5	28	—	—	0·9	0·8	10·7
Eczema	28	—	—	1·3	2·4	31·1	15	—	—	—	1·7	0·6	14·1	43	—	—	1·4	3·0	25·2
Herpes	26	—	—	1·2	0·8	11·0	8	—	—	—	0·9	0·2	9·7	34	—	—	1·1	1·0	10·7
Psoriasis	9	—	1	0·4	1·3	53·0	1	—	1	—	0·1	0·5	165·0	10	—	1	0·3	1·8	64·2
Tineacruris	37	—	—	1·7	2·1	20·8	7	—	—	—	0·8	0·3	13·3	44	—	—	1·5	2·4	19·6

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Ingrowing toe-nail ..	30	—	—	1·4	1·3	16·0	27	—	—	—	3·1	1·2	15·8	57	—	—	1·9	2·5	15·9
Other diseases of the skin	85	—	1	3·9	6·8	29·1	40	—	1	—	4·7	2·6	23·3	125	—	1	4·1	9·3	27·2
TOTAL—DISEASES OF AREOLAR TISSUE OR SKIN.	567	—	2	26·3	32·9	21·2	210	—	2	—	24·4	9·1	15·7	777	—	2	25·8	41·9	19·7
Diseases of Urinary Organs.																			
Nephritis	—	—	1	—	—	—	3	—	1	—	0·3	0·5	59·0	3	—	1	0·1	0·5	59·0
Pyelitis	8	—	—	0·4	1·0	47·2	3	—	1	1	0·3	0·2	25·7	11	—	1	0·4	1·2	41·4
Cystitis	4	—	—	0·2	0·4	36·5	12	—	—	—	1·4	0·6	17·9	16	—	—	0·5	1·0	22·6
Incontinence of urine ..	4	—	1	0·2	0·2	19·7	—	—	—	—	—	—	—	4	—	1	0·1	0·2	19·7
Albuminuria	10	—	1	0·5	0·6	21·9	2	—	—	—	0·2	0·0	9·0	12	—	1	0·4	0·6	19·7
Other diseases of urinary organs	19	—	—	0·9	1·6	30·6	21	—	3	—	2·4	1·8	31·6	40	—	—	1·3	3·4	31·1
TOTAL—DISEASES OF URINARY ORGANS ..	45	—	3	2·1	3·8	31·2	41	—	5	1	4·8	3·2	28·0	86	—	4	2·9	7·0	29·7
Tumours and Cysts																			
Tumours non-malignant	13	—	—	0·6	0·7	19·8	8	1	1	—	0·9	0·6	26·7	21	1	—	0·7	1·3	22·4
Tumours, malignant ..	3	—	—	0·1	0·5	55·0	1	1	1	—	0·1	0·9	336·0	4	1	—	0·1	1·4	125·2
Cysts	31	—	—	1·4	1·2	13·6	18	—	—	—	2·1	0·7	13·4	49	—	—	1·6	1·8	13·6
TOTAL—TUMOURS AND CYSTS	47	—	—	2·2	2·3	18·0	27	2	2	—	3·1	2·2	29·3	74	2	—	2·5	4·5	22·1
Poisons.																			
Effects of alcohol ..	1	—	—	0·0	0·0	6·0	—	—	—	—	—	—	—	1	—	—	0·0	0·0	6·0
Other poisons	8	1	—	0·4	0·2	9·0	25	—	—	—	2·9	0·9	13·2	33	1	—	1·1	1·1	12·2
TOTAL—POISONS ..	9	1	—	0·4	0·2	8·7	25	—	—	—	2·9	0·9	13·2	34	1	—	1·1	1·1	12·0
No appreciable disease ..	26	—	1	1·2	0·8	10·9	10	—	—	—	1·2	0·2	7·5	36	—	1	1·2	1·0	10·0
Debility	16	—	—	0·7	0·7	14·9	31	—	4	—	3·6	1·0	12·3	47	—	—	1·6	1·7	13·2
*TOTAL—ALL DISEASES	6,480	23	151	301·0	330·2	18·6	5,462	22	200	34	635·1	248·2	16·6	11,942	45	185	396·4	578·3	17·7

* Analysed in further detail in Table VII.

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TABLE XII.—NOSOLOGICAL TABLE FOR HOME, ABROAD, AND TOTAL FORCE, 1927.—*continued.*

Disease.	Home. Average strength, 21,526.						Abroad. Average strength, 8,597.							Total Force. Average strength, 30,123.					
	No. of cases.	No. of deaths.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages.		No. of cases.	No. of deaths.	No. invalided to United Kingdom.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages.		No. of cases.	No. of deaths.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages.	
					No. sick daily.	Duration of case.						No. sick daily.	Duration of case.					No. sick daily.	Duration of case.
						Days.							Days.						Days.
General Injuries.																			
Burns and scalds ..	9	1	—	0·4	0·5	18·4	10	1	—	—	1·2	0·3	12·3	19	2	—	0·6	0·8	15·2
Heatstroke, sunstroke, and heat exhaustion ..	1	—	—	0·0	0·0	5·0	9	1	—	—	1·0	0·3	10·4	10	1	—	0·3	0·3	9·9
Suffocation and strangulation	—	—	—	—	—	—	2	2	—	—	0·2	—	—	2	2	—	0·1	—	—
Drowning	4	4	—	0·2	—	—	4	4	—	—	0·5	—	—	8	8	—	0·3	—	—
Minor injuries	79	—	—	3·7	2·1	9·6	24	—	—	—	2·8	0·6	8·5	103	—	—	3·4	2·6	9·4
Multiple fractures ..	64	38	4	3·0	7·9	44·8	27	18	3	—	3·1	1·4	18·3	91	56	4	3·0	9·2	36·9
Multiple wounds ..	2	—	1	0·1	0·3	56·5	1	—	1	1	0·1	0·4	133·0	3	—	2	0·1	0·7	82·0
Other injuries	10	1	—	0·5	0·2	7·2	4	1	—	—	0·5	0·1	7·0	14	2	—	0·5	0·3	7·1
*TOTAL—GENERAL INJURIES	169	44	5	7·9	10·9	23·6	81	27	4	1	9·4	2·9	13·3	250	71	6	8·3	13·9	20·3
Local Injuries.																			
(i) Head and Neck																			
Contusions and wounds ..	90	—	2	4·2	3·5	14·1	51	1	—	1	6·0	1·9	13·0	141	1	3	4·7	5·3	13·7
Gunshot wounds	1	1	—	0·0	—	—	—	—	—	—	—	—	—	1	1	—	0·0	—	—
Burns and scalds ..	13	—	—	0·6	0·4	10·6	4	—	—	—	0·5	0·1	9·2	17	—	—	0·6	0·5	10·3
Fracture of skull ..	22	4	—	1·0	2·1	34·9	4	1	2	—	0·5	0·7	65·5	26	5	—	0·9	2·8	39·6
Concussion of brain ..	92	—	1	4·3	5·0	19·4	21	—	2	—	2·4	1·0	18·2	113	—	1	3·8	6·0	19·2
Other fractures	21	—	—	1·0	1·0	14·7	10	—	—	—	1·2	0·5	18·5	31	—	—	1·0	1·5	17·2
Other injuries	11	—	1	0·5	0·5	17·7	13	—	2	2	1·5	0·9	24·7	24	—	3	0·8	1·4	21·5
TOTAL—HEAD AND NECK	250	5	4	11·7	12·4	18·0	103	2	6	3	12·1	5·1	17·9	353	7	7	11·8	17·5	18·0

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(ii) Trunk :																			
Contusions and wounds..	43	2	—	2·0	1·5	12·8	19	—	—	—	2·2	1·1	21·1	62	2	—	2·1	2·7	15·6
Gunshot wounds.. ..	—	—	—	—	—	—	—	—	1	—	—	1·0	—	—	—	—	—	1·0	—
Fractures	14	—	—	0·7	0·9	24·4	3	—	—	—	0·3	0·1	12·0	17	—	—	0·6	1·0	22·2
Other injuries	16	—	—	0·7	0·4	9·4	9	—	—	—	1·0	0·2	6·6	25	—	—	0·8	0·6	8·4
TOTAL—TRUNK	73	2	—	3·4	2·9	14·3	31	—	1	—	3·6	2·4	28·4	104	2	—	3·5	5·3	18·5
(iii) Upper extremity :																			
Contusions and wounds..	98	—	1	4.6	4·6	17·1	38	—	—	1	4·4	1·3	12·9	136	—	2	4·5	5·9	15·9
Gunshot wounds.. ..	2	—	—	0·1	0·5	87·5	1	—	—	—	0·1	0·3	122·0	3	—	—	0·1	0·8	99·0
Burns and scalds ..	9	—	—	0·4	0·4	18·1	4	—	—	—	0·5	0·1	11·0	13	—	—	0·4	0·6	15·4
Fractures	144	—	2	6·7	16·4	41·6	50	—	—	1	5·8	4·6	33·3	194	—	3	6·4	21·0	39·5
Dislocations	25	—	—	1·2	1·2	17·8	6	—	—	—	0·7	0·5	28·3	31	—	—	1·0	1·7	19·8
Sprains	17	—	—	0·8	0·5	11·3	18	—	—	—	2·1	0·5	9·2	35	—	—	1·2	1·0	10·2
Other injuries	7	—	—	0·3	0·5	24·4	1	—	—	—	0·1	0·1	21·0	8	—	—	0·3	0·5	24·0
TOTAL—UPPER EXTREMITY	302	—	3	14·0	24·1	29·2	118	—	—	2	13·7	7·3	22·7	420	—	5	13·9	31·5	27·4
(iv) Total—Hand and Wrist	120	—	1	5·6	7·6	23·1	59	—	—	1	6·9	2·5	15·5	179	—	2	5·9	10·1	20·6
(v) Total—Rest of limb	182	—	2	8·5	16·5	33·2	59	—	—	1	6·9	4·8	29·9	241	—	3	8·0	21·4	32·4
(vi) Lower extremity :																			
Contusions and wounds..	144	—	—	6·7	5·9	14·9	104	—	—	—	12·1	2·8	9·8	248	—	—	8·2	8·7	12·8
Gunshot wounds.. ..	—	—	—	—	—	—	3	—	—	—	0·3	0·1	14·0	3	—	—	0·1	0·1	14·0
Burns and scalds ..	11	—	—	0·5	0·6	18·4	11	1	—	—	1·3	0·8	25·1	22	1	—	0·7	1·3	21·7
Fractures	92	—	2	4·3	22·1	87·8	24	—	6	1	2·8	5·1	77·4	116	—	3	3·9	27·2	85·7
Dislocations	4	—	—	0·2	0·2	15·5	1	—	—	—	0·1	0·2	67·0	5	—	—	0·2	0·4	25·8
Sprains	183	—	—	8·5	7·7	15·4	144	—	2	—	16·8	4·4	11·1	327	—	—	10·9	12·1	13·5
Other injuries	183	—	—	8·5	8·6	17·2	120	—	3	—	14·0	5·4	16·5	303	—	—	10·1	14·1	16·9
TOTAL—LOWER EXTREMITY	617	—	2	28·7	45·1	26·7	407	1	11	1	47·3	18·8	16·8	1,024	1	3	34·0	63·8	22·7

* Analysed in further detail in Table VII.

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TABLE XII.—NOSOLOGICAL TABLE FOR HOME, ABROAD, AND TOTAL FORCE, 1927.—*continued.*

Disease.	Home. Average strength, 21,526.						Abroad. Average strength, 8,597.							Total Force. Average strength, 30,123.					
	No. of cases.	No. of deaths.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages.		No. of cases.	No. of deaths.	No. invalided to United Kingdom.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages.		No. of cases.	No. of deaths.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages.	
					No. sick daily.	Duration of case.						No. sick daily.	Duration of case.					No. sick daily.	Duration of case.
						Days.							Days.						Days.
(vii) TOTAL—FOOT AND ANKLE	231	—	—	10·7	10·0	15·8	192	—	1	—	22·3	5·9	11·2	423	—	—	14·0	15·9	13·7
(viii) TOTAL—KNEE ..	210	—	—	9·8	11·2	19·5	125	—	5	—	14·5	6·7	19·5	335	—	—	11·1	17·9	19·5
(ix) TOTAL—REST OF LIMB..	176	—	2	8·2	23·9	49·5	90	1	5	1	10·5	6·2	25·2	266	1	3	8·8	30·1	41·3
*TOTAL—ALL LOCAL INJURIES	1,242	7	9	57·7	84·5	24·8	659	3	18	6	76·8	33·6	18·6	1,901	10	15	63·2	118·1	22·6
*TOTAL—ALL INJURIES ..	1,411	51	14	65·6	95·4	24·7	740	30	22	7	86·2	36·6	18·0	2,151	81	21	71·5	131·9	22·4
*TOTAL—ALL DISEASES ..	6,480	23	151	301·0	330·2	18·6	5,462	22	200	34	635·1	248·2	16·6	11,942	45	185	396·4	578·3	17·7
*TOTAL—ALL DISABILITIES	7,891	74	165	366·6	425·6	19·7	6,202	52	222	41	721·3	284·7	16·8	14,093	126	206	467·8	710·2	18·4

* Analysed in further detail in Table VII.

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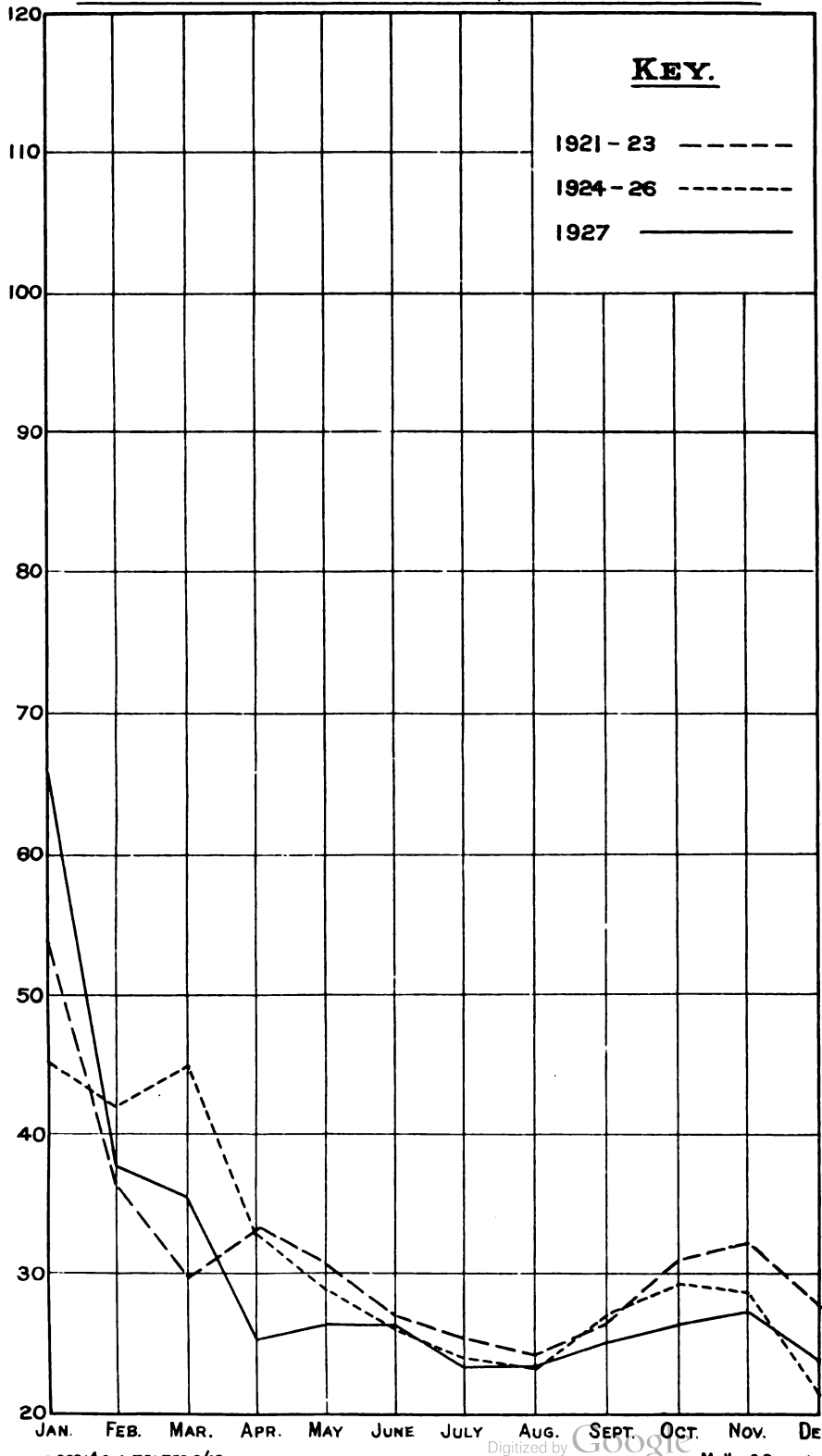
Chart I. Sickness At Home, 1927.

Monthly Case Incidence Per 1,000 of Strength.



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CHAPTER II.—THE HEALTH OF THE ROYAL AIR FORCE AT HOME DURING 1927.

General.

37. The average strength of the force at home, excluding units of the Fleet Air Arm, during 1927 was 21,254, and the total number of cases of sickness was 12,845, of which 5,049 were cases of less than 48 hours' duration and not admitted to hospital. The sickness incidence per 1,000 of strength was 366·8 excluding 48-hour cases and 604·4 including 48-hour cases, compared with averages of 374·2 and 753·8 respectively during the previous three-yearly period. The incidence of deaths remained the same, 3·4 per 1,000, while the final invaliding incidence fell to 7·7 per 1,000 from averages of 9·8 and 14·7 respectively over the previous two three-yearly periods. The numbers of sick daily rose slightly from an average of 19·5 during the period 1924–26 to 20·8, and repeated the average of the period 1921–23.

38. The total disabilities, disease and injury, with a further subdivision of the former into certain individual groups of diseases which accounted for most of the medical non-effectiveness at home, are analysed by age groups in table XIII, page 33. Comparing the figures in this table with the corresponding figures in 1926, the youngest age group of airmen is again shown as the most susceptible to disease. In the absence of epidemics such as occured in 1924 and 1925, influenza appears, contrary to to expectation, to attack this age group less frequently than any of the others, and upper air passage infections most frequently of all. Venereal disease, as in 1926, shows the lowest incidence in the age group, 18–19, and the highest between the ages of 26 and 27. Diseases of the digestive system were commonest in the youngest age group of airmen, and injuries in the group of officers and cadets.

39. The figures given in table XIII are further analysed in table XIV, page 34, by stations which maintained an average strength of 500 or over during 1927. These stations vary from year to year, and it is only possible to compare the six or eight which appear in the tables in successive years. Of the stations analysed for 1927, Halton showed the highest sickness incidence in 1926, with Cranwell second and Eastchurch the lowest. In 1927, the highest incidence occurred at Cranwell, with Halton second, and the lowest for the fourth year in succession at Eastchurch.

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40. Chart I, facing page 31, shows the monthly incidence of sickness at home during 1927 and the averages of the two three-yearly periods 1921–23 and 1924–26. The curves continue to resemble each other very closely; the highest peak occurs in January and the curve falls steadily to the end of the year except for a small rise in October or November, and finds its lowest level in July or August and again in December—the two leave periods of the year.

Diseases calling for Special Mention.

41. *Enteritis.*—Ninety-two cases of enteritis were reported at home during the year, of which 29 occurred as a small local outbreak at Flower Down and were traced to a supply of brawn held by the Navy, Army and Air Force Institutes. There were no deaths, and even including this unusual outbreak, the incidence for 1927 shows no increase over that for 1926.

42. *Influenza.*—Seven hundred and eighty-six cases, compared with 472 in 1926, occurred during 1927. With the exception of Flower Down and Henlow, which accounted for nearly 25 per cent., the cases were distributed fairly evenly over all stations. The average duration of each case was 8·1 days and no deaths were recorded.

43. *Malaria.*—There no primary cases of malaria at home during the year, but the number of clinical and recurrent cases rose from 84 in 1926 to 144 in 1927, and was the echo of the increased incidence of malaria abroad during 1926.

44. *Upper air passage infections.*—The incidence of diseases of the upper air passages rose from 61·6 in 1926 to 70·6 in 1927; the average duration of each case remained the same.

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TABLE XIII.—INCIDENCE OF CERTAIN DISEASES AT HOME ANALYSED BY AGE GROUPS.

Age last birthday.	Average strength.	Case incidence per 1,000 of strength.								
		Influenza.	Upper air passage infections.	Venereal diseases.	Respiratory diseases.	Digestive diseases.	All other diseases.	All diseases.	All injuries.	All disabilities.
Airmen—										
Under 18 ..	1,923	11·4	153·9	—	10·9	72·3	255·8	504·4	64·5	568·9
18 and 19 ..	2,853	28·7	90·8	2·1	10·2	30·8	142·0	304·6	76·8	381·4
20 and 21 ..	2,829	39·6	84·1	12·7	9·9	31·8	115·2	293·4	76·0	369·4
22 and 23 ..	2,436	39·4	66·1	20·9	9·4	36·1	134·2	306·2	65·3	371·5
24 and 25 ..	3,431	40·8	48·1	20·4	16·0	30·9	118·6	274·8	62·4	337·2
26 and 27 ..	2,172	31·3	51·6	27·6	8·3	33·1	138·1	290·1	58·0	348·1
28 and 29 ..	1,050	21·0	36·2	14·3	13·3	31·4	95·2	211·4	37·1	248·6
30 to 34 ..	1,531	32·7	37·2	12·4	18·9	24·8	79·0	205·1	45·1	250·2
35 to 39 ..	617	30·8	37·3	4·9	19·4	34·0	105·3	231·8	37·3	269·0
40 and over ..	367	49·0	16·3	8·2	35·4	27·2	122·6	258·9	27·2	286·1
Total airmen ..	19,209	32·7	70·5	13·7	12·6	35·7	134·7	300·0	62·4	362·3
Officers and cadets ..	2,317	67·8	70·8	2·6	13·4	44·9	110·5	309·9	92·4	402·2
Total at home..	21,526	36·5	70·6	12·5	12·7	36·7	132·1	301·0	65·6	366·6

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TABLE XIV.—SICKNESS AT PRINCIPAL STATIONS AT HOME.

Station.	Average strength.	Case incidence per 1,000 of strength.								
		Influenza.	Upper air passage infections.	Venereal diseases.	Respiratory diseases.	Digestive diseases.	All other diseases.	All diseases.	All injuries.	All disabilities.
Andover ..	521	3·8	46·1	23·0	3·8	32·6	76·8	186·2	71·0	257·2
Cranwell ..	736	32·6	125·0	16·3	4·1	44·8	154·9	377·7	116·8	494·6
Eastchurch ..	551	14·5	18·1	9·1	12·7	18·1	67·2	139·7	63·5	203·3
Flower Down ..	1,004	73·7	113·5	11·0	13·9	36·8	162·4	411·4	56·8	468·1
Halton	3,462	1·4	122·5	5·2	11·0	60·0	203·7	403·8	62·7	466·5
Henlow.. ..	1,530	70·6	60·8	11·8	15·7	55·5	141·2	355·6	64·1	419·6
Manston ..	1,085	46·1	100·5	9·2	11·1	20·2	151·2	338·2	68·2	406·5
Netheravon ..	599	105·2	45·1	10·0	20·0	36·7	131·9	348·9	95·2	444·1
Uxbridge ..	2,021	17·8	40·6	13·4	9·4	22·7	166·8	270·7	33·2	303·8
All other stations	10,017	41·5	54·3	15·0	14·2	30·8	98·7	254·6	68·3	322·9
Total ..	21,526	36·5	70·6	12·5	12·7	36·7	132·1	301·0	65·6	366·6

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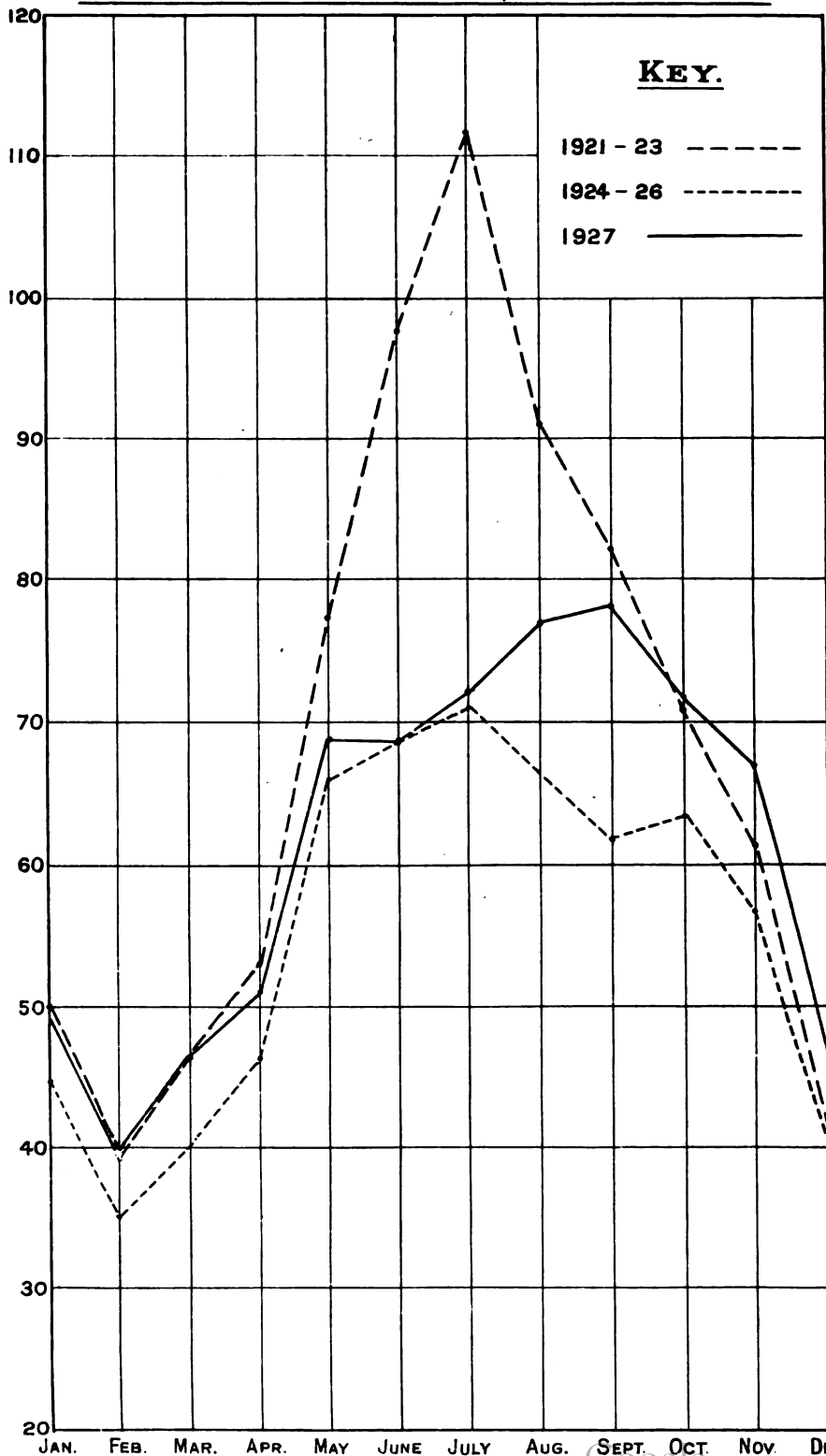
CHART II. SICKNESS ABROAD, 1927.

MONTHLY CASE INCIDENCE PER 1,000 OF STRENGTH.



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CHAPTER III.—THE HEALTH OF THE ROYAL AIR FORCE ABROAD DURING 1927.

General.

45. The sickness figures for the force abroad, excluding the Fleet Air Arm, and by geographical areas are given in table I, page viii. The Fleet Air Arm is shown separately in the same table, and the figures for the force in China have been included in the total abroad.

46. The average strength abroad was 8,158, and the total number of cases of sickness was 10,994, representing an incidence of 1,347·5 per 1,000, compared with averages of 1,297·4 and 1,960·8 for the two previous periods.

47. The average duration of each case showed a slight decrease while the average number of days' sickness per head remained very much the same. The number of sick daily remained practically unchanged, 36·7 in 1927 and 36·1 in 1926, the death incidence fell from 7·9 to 5·6, but the rate of invaliding to the United Kingdom rose from 16·3 to 26·6. This rise cannot be definitely accounted for and is probably due to several factors, such as an increase in the proportion of tour expired to newly drafted personnel and variations in the average age of the personnel of the command.

48. Table XV, page 38, for the force abroad, corresponds to table XIII, page 33, for the force at home, except that in the former influenza is omitted and dysentery, malaria and sandfly fever, which are peculiar to commands abroad are included. Excluding those age groups in which the population was very small, i.e., 18 and 19, 35–39, 40 and over, the highest disability incidence occurred, as in the previous two years, in the group 26 and 27, and the lowest in the officer group.

49. Table XVI, page 39, compares the incidence of dysentery, malaria and sandfly fever at the larger stations in each command abroad. In Egypt, Aboukir and Abu-Sueir, each showed an increased incidence in dysentery, malaria and sandfly fever compared with 1926. In Iraq, at the larger stations, the combined incidence of these three diseases fell, particularly at Basrah, which in 1926 showed an incidence of 1,090·1 compared with 567·0 in 1927. This fall was mainly due to the drop in the number of cases of malaria, from 466 in a strength of 3,536, to 128 in a strength of 2,739. In India, at Karachi, and in Malta, the incidence rose from 316·4 to 401·1 and from 26·3 to 91·8 respectively, the rise at Karachi being due to an increase in the number of cases of malaria from 196 to 281, and in Malta largely to an increase in the number of cases of sandfly fever. Of all the larger stations abroad, Basrah continues to show the highest incidence of disease.

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50. The numbers of cases of dysentery, malaria and sandfly fever by types of disease for all stations abroad during 1927 are given in table XVII, page 40. Figures for China and the Fleet Air Arm are shown separately for the first time. A very marked decrease is noticeable in the incidence of malaria in Iraq and an appreciable decrease in dysentery. In India the figures for dysentery and sandfly fever approximate closely to those of 1926, while malaria shows an appreciable decrease. In the Mediterranean Littoral, dysentery shows a small decrease, but there was a very marked increase in the number of cases of malaria and sandfly fever—almost entirely in Egypt and Palestine. In the Mediterranean Littoral and Iraq the prevailing type of dysentery continues to be protozoal in origin, while in India the most prevalent type during 1927 was bacillary. In 1926 the same proportion obtained in the Mediterranean Littoral, while in India and Iraq there were approximately the same numbers of cases of the bacillary as of the protozoal type. The rise in the figures for malaria in Egypt and Palestine occurred both in the number of primary cases and in the figures for all types. Ninety-six cases of primary malaria were notified in Palestine and were contracted largely in one armoured car company (53 cases) on reconnaissance around Azrak. Sixty-one primary cases occurred in Egypt compared with 35 cases in 1926 and 22 in 1925. The high total figure for all types is in part accounted for by recurrences among personnel drafted during the year to Egypt from Iraq, where, in 1926, there were 308 cases of primary malaria in an average strength of 3,536.

51. Table XVIII, page 41, analyses the numbers of cases of dysentery, malaria and sandfly fever which occurred during 1927 in each command abroad by months, and shows for purposes of comparison the incidence of each type by commands for 1927 and the two previous three-yearly periods 1921–23 and 1924–26. As in previous years, the malaria peak in the Mediterranean Littoral and India is found at the end of the year, in October or November, and in Iraq in May or June, with a second smaller peak in November.

52. Sandfly fever commenced at approximately the same time in each command, but reached the maximum slightly earlier in Iraq. There are few, if any, cases in any command during the first three months and December of each year, and the peak is always more marked in Iraq than in either of the other commands. Dysentery in all commands is spread more or less evenly throughout the year. The incidence of dysentery in Iraq has fallen considerably each period, while in the Mediterranean Littoral and India it was lower for 1927 than for 1921–23 but slightly higher, particularly in India, than for 1924–26. The incidence of malaria showed a marked rise in the Mediterranean Littoral, a slight rise in India and a marked decrease in Iraq during the same periods. Sandfly fever showed a fall in India compared with both of the

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previous periods; in the Mediterranean Littoral the incidence remained approximately the same as that for the previous period, taking into consideration the exclusion of units of the Fleet Air Arm from the 1927 average, but showed a considerable decrease compared with that for the period 1921–23. In 1927 the incidence of sandfly fever in Iraq was 156 per 1,000, thus continuing the reduced incidence shown in 1924, 1925 and 1926, when the rates were 139, 142 and 155 per 1,000 respectively, compared with an average of 377 per 1,000 for the three years 1921–23.

Other Diseases calling for Special Mention.

53. *Enteric group.*—(i) *Typhoid fever.*—Thirty-six cases were reported during 1927, compared with 36 in 1926 and 27 in 1925. The majority of the cases occurred in Iraq, 27 with 4 deaths, giving an incidence of 9·9 per 1,000 compared with 5·4 in 1926; in 20 of the 27 cases B. typhosus was isolated, while in the remainder there was no bacteriological confirmation of the clinical evidence.

(ii) *Paratyphoid A.*—One case of paratyphoid A. occurred in India during 1927 compared with a total abroad of three in 1926. There were no deaths.

(iii) *Paratyphoid B.*—Four cases were reported during the year, one in Egypt and three in Iraq. There were no deaths.

54. *Heatstroke and heat exhaustion.*—A total of nine cases with symptoms due to the effects of heat were reported during the year; eight of these were of a mild nature, but one, which eventually resulted in death from complications, reproduced symptoms of a heat hyper-pyrexia such as occurred in Iraq in 1926.

55. *Beri-beri.*—Eight cases of a disease closely resembling beri-beri occurred at Aden. They are referred to in chapter IV, and in the absence of sufficient evidence to diagnose them as beri-beri, they have been shown in the tables as neuritis.

56. Chart II, facing page 35, shows the monthly case incidence for sickness for the force abroad during 1927 and the periods 1921–23 and 1924–26. On the grouping of the periods illustrated on this chart the curves very closely resemble in general outline those reproduced in previous reports. The high peak for the period 1921–23 was due to the high incidence of sandfly fever, particularly in Iraq, and has not been reproduced in later years. The peak of the 1927 curve was higher and later than during the previous three-yearly period, and was largely due to the increased incidence of sandfly fever and malaria in Egypt.

The Force in China.

57. The average strength of the force in China, excluding units of the Fleet Air Arm, during 1927, was 147. Two hundred and six cases of sickness occurred, resulting in two deaths and three invalidings to the United Kingdom. There were no cases of malaria in this force, one case of clinical dysentery and three cases of sandfly fever.

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TABLE XV.—INCIDENCE OF CERTAIN DISEASES ABROAD, ANALYSED BY AGE GROUPS.

Age last birthday.	Average strength.	Case incidence per 1,000 of strength.										
		Dysentery.	Malaria.	Sandfly fever.	Upper air passage infections.	Venereal diseases.	Respiratory diseases.	Digestive diseases.	All other diseases.	All diseases.	All injuries.	Total disabilities.
Airmen—												
18 and 19	54	*	*	*	*	*	*	*	*	*	*	*
20 and 21	1,191	17·6	89·0	84·8	78·1	16·8	14·3	71·4	271·2	643·2	92·4	735·6
22 and 23	1,878	10·1	122·5	89·5	69·8	27·2	11·2	52·7	250·3	633·1	92·7	725·8
24 and 25	1,742	8·6	157·9	69·5	69·5	37·9	11·5	50·5	261·2	666·5	87·8	754·3
26 and 27	1,156	13·0	167·8	96·9	70·1	54·5	30·3	59·7	240·5	732·7	86·5	819·2
28 and 29	499	4·0	176·4	74·2	42·1	44·1	32·1	52·1	228·5	653·3	66·1	719·5
30 to 34	714	8·4	124·6	54·6	47·6	33·6	22·4	57·4	204·5	553·2	67·2	620·4
35 to 39	269	18·6	89·2	85·5	111·5	14·9	37·2	85·5	256·5	698·9	74·3	773·2
40 and over	109	9·2	165·1	45·9	64·2	27·5	18·3	91·7	403·7	825·7	36·7	862·4
Total, airmen	7,612	11·0	134·7	79·7	68·4	33·2	18·1	58·3	250·3	653·8	85·0	738·8
Total, officers	985	12·2	56·9	59·9	92·4	6·1	16·2	45·7	201·0	490·4	95·4	585·8
Total, abroad	8,597	11·3	125·7	77·5	71·2	30·1	17·9	56·9	244·6	635·1	86·2	721·3

* Not calculated.

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TABLE XVI.—SICKNESS, EXCLUDING INJURY, AT PRINCIPAL STATIONS ABROAD.

Station.	Average strength	Number of cases.						Percentage of total number of cases of disease at stations.					Case incidence per 1,000 of strength.		
		Dysentery.	Malaria.	Sandfly fever.	Total: dysentery, malaria and sandfly fever.	All other diseases.	Total all diseases.	Dysentery.	Malaria	Sandfly fever.	Total: dysentery, malaria and sandfly fever.	All other diseases.	Dysentery, malaria and sandfly fever.	All other diseases.	All diseases.
Egypt.															
Aboukir ..	787	1	53	7	61	384	445	0·2	11·9	1·6	13·7	86·3	77·5	487·9	565·4
Abu Sueir ..	420	2	35	39	76	197	273	0·7	12·8	14·3	27·8	72·2	181·0	469·0	650·0
Cairo	501	4	19	11	34	225	259	1·5	7·3	4·3	13·1	86·9	67·9	449·1	517·0
Iraq.															
Baghdad ..	286	5	3	33	41	133	174	2·9	1·7	19·0	23·6	76·4	143·4	465·0	608·4
Basrah	321	6	128	48	182	168	350	1·7	36·6	13·7	52·0	48·0	567·0	523·4	1,090·4
Hinaidi ..	1,715	23	58	292	373	749	1,122	2·1	5·2	26·0	33·3	66·7	217·5	436·1	653·6
Mosul	257	1	16	51	68	100	168	0·6	9·5	30·4	40·5	59·5	264·6	389·1	653·7
India.															
Karachi ..	748	9	281	10	300	220	520	1·7	54·1	1·9	57·7	42·3	401·1	294·1	695·2
Mediterranean.															
Malta	305	4	4	20	28	163	191	2·1	2·1	10·5	14·7	85·3	91·8	534·4	626·2

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TABLE XVII.—DYSENTERY, MALARIA AND SANDFLY FEVER AT STATIONS ABROAD.

Station.	Average strength.	No. of cases.										
		Dysentery.								Malaria.		Sandfly fever.
		Clinical		Bacillary		Protozoal		All types				
		Primary.	All.	Primary.	All.	Primary.	All.	Primary.	All.	Primary.	All.	
Mediterranean Littoral.												
Aboukir ..	787	1	1	—	—	—	—	1	1	17	53	7
Abu Sueir ..	420	—	—	2	2	—	—	2	2	22	35	39
Aden ..	153	1	1	—	—	—	—	1	1	4	8	—
Amman ..	214	—	—	—	—	5	5	5	5	59	84	18
Cairo and Heliopolis	501	2	2	1	1	—	1	3	4	7	19	11
Helouan ..	161	—	—	—	—	—	—	—	—	4	10	16
Malta ..	305	—	—	—	—	—	4	—	4	—	4	20
Moascar ..	194	—	—	1	1	—	—	1	1	5	10	13
Ramleh ..	176	—	—	—	—	1	1	1	1	7	22	—
Various small stations and drafts *en route* ..	385	—	—	1	1	6	6	7	7	32	53	25
Total ..	3,296	4	4	5	5	12	17	21	26	157	298	149
India.												
Ambala ..	144	—	—	—	—	—	—	—	—	15	35	37
Karachi ..	748	2	2	3	3	2	4	7	9	137	281	10
Kohat ..	131	—	—	4	5	—	—	4	5	24	64	14
Lahore ..	144	—	—	3	5	1	1	4	6	27	50	5
Lower Topa ..	112	—	—	—	—	1	1	1	1	2	9	1
Peshawar ..	151	—	—	—	—	—	—	—	—	19	47	9
Quetta ..	196	—	—	1	1	—	—	1	1	8	16	3
Risalpur ..	275	—	1	1	1	—	1	1	3	24	56	6
Various small stations ..	75	—	—	1	1	2	3	3	4	3	4	—
Total ..	1,976	2	3	13	16	6	10	21	29	259	562	85
Iraq.												
Baghdad ..	286	2	2	2	3	—	—	4	5	1	3	33
Basrah and Margil ..	321	—	—	—	—	6	6	6	6	49	128	48
Hinaidi and Kirkuk ..	1,715	9	13	3	3	5	7	17	23	15	58	292
Mosul ..	257	—	—	—	—	1	1	1	1	4	16	51
Shaibah ..	160	—	—	—	—	4	5	4	5	6	16	4
Total ..	2,739	11	15	5	6	16	19	32	40	75	221	428
China.												
All stations ..	147	1	1	—	—	—	—	1	1	—	—	3
Fleet Air Arm.												
Total abroad	439	—	—	—	—	—	1	—	1	—	—	1

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TABLE XVIII.—DYSENTERY, MALARIA, AND SANDFLY FEVER ABROAD—MONTHLY CASE INCIDENCE.

Month.	Dysentery.						Malaria.						Sandfly fever.		
	Mediterranean Littoral.		India.		Iraq.		Mediterranean Littoral.		India.		Iraq.		Mediterranean Littoral.	India.	Iraq.
	Primary cases.	All cases.	Primary cases.	All cases.	Primary cases.	All cases.	Primary cases.	All cases.	Primary cases.	All cases.	Primary cases.	All cases.			
January	2	2	2	4	5	6	7	21	7	24	3	20	—	1	—
February	1	2	3	3	—	—	1	10	5	15	2	12	1	—	—
March	—	2	3	5	1	1	3	17	4	19	4	21	—	1	—
April	3	3	3	3	6	6	5	16	3	12	3	19	—	4	20
May	1	1	2	3	—	2	2	14	7	23	6	28	6	7	72
June	1	2	—	—	1	1	3	16	13	39	6	22	7	10	84
July	—	—	1	3	3	3	15	31	15	35	6	22	17	5	88
August	3	3	3	3	1	2	33	44	38	78	6	19	38	9	73
September ..	6	6	2	3	1	2	61	78	37	84	3	7	40	22	49
October	2	2	—	—	6	6	13	24	62	120	6	11	27	21	37
November	2	2	1	1	5	8	5	12	61	97	21	26	11	5	5
December	—	1	1	1	3	3	9	15	7	16	9	14	2	—	—
1927 Total ..	21	26	21	29	32	40	157	298	259	562	75	221	149	85	428
Case incidence per 1,000 of strength															
1927	6·4	7·9	10·6	14·7	11·7	14·6	47·6	90·4	131·1	284·4	27·4	80·7	45·2	43·0	156·3
1924–1926 ..	5·4	7·1	7·9	9·4	32·0	36·9	12·2	29·2	115·2	265·3	62·3	144·0	23·8	50·6	145·3
1921–1923 ..	12·8	15·7	16·1	29·3	32·0	40·8	10·5	23·9	117·1	245·3	57·2	109·2	84·2	79·9	377·3

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CHAPTER IV.—MISCELLANEOUS.

The Central Medical Board.

58. The total number of examinations carried out by the Central Medical Board during 1927 was 2,374, compared with 2,227 in 1926. Of this total, 964 examinations were for the purpose of assessing the medical fitness of candidates for commissions in various branches of the Royal Air Force (regular, reserve and auxiliary); 1,002 were re-examinations of candidates, routine medical boards and pension boards on similar personnel; 133 were annual medical examinations on serving officers who were on leave or on duty at establishments carrying no medical officer; and 275 were examinations of civilian pilots.

59. Five hundred and eighty-eight of the 964 examinations for commissions were in respect of new entrants for flying duties in the Regular Air Force and the results of these examinations are analysed in table XIX, page 75. A further 160 examinations were to determine the fitness for permanent commissions in various branches of the force among officers already serving under short service conditions, and new entrants; of the former, 35 were found fit and one permanently unfit, while of the latter, 69 were accepted and 55 rejected, 41 as permanently and 14 as temporarily unfit. The remainder consisted of 31 candidates for commissions in the ancillary services of the Regular Air Force, 130 in the Reserve of Officers, 20 in the Auxiliary Air Force, 14 in Princess Mary's Royal Air Force Nursing Service, 16 preliminary examinations for the Royal Air Force Cadet College, and five secondments from other services.

60. A total of 335 candidates out of the 964 who presented themselves for examination were rejected on medical grounds and the causes of rejection both temporary and final are analysed in table XXI, page 77. The chief cause of rejection was defective vision—33 per cent. as compared with 41 per cent. in 1926, and 38 per cent. in 1925.

61. Among the new entrants for flying duties analysed in table XIX, page 75, 53 per cent. were accepted—a similar percentage to that of 1926. By individual class of candidates the percentage of acceptances in 1927 was higher among cadets and airman pilots than in 1926, remained approximately the same among candidates for the Fleet Air Arm, and fell slightly among candidates for short service commissions.

62. Table XX, page 76, records the average results of the physical efficiency tests and measurements in each class of candidate shown as accepted as medically fit in table XIX.

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Medical Officers School of Instruction and Medical Research Laboratory.

63. During the year 1927, 27 medical officers attended for courses of instruction ; of these, 23 had recently been appointed to short service commissions, one came from the Royal Naval Medical Service, one from the Royal Canadian Army Medical Corps, and two from the Polish Army Medical Service. One officer from the Royal Canadian Army Medical Corps continued a course of instruction begun in 1926. Of the 23 officers appointed to short service commissions, 17 were attached for the main part of their instruction to the newly formed Hospital Orderlies Training Depôt, Halton. This step initiated a scheme for the incorporation of the Medical Officers School of Instruction with the Hospital Orderlies Training Depôt to form a new medical unit to be known as the Medical Training Depôt.

Flying Aptitude Apparatus.

64. During the year arrangements were made to instruct certain executive officers in the use of the flying aptitude apparatus, which has now been installed at several flying training schools.

Aviation Deafness.

65. Experiments have been continued to devise a satisfactory type of ear defender. The standard model with rubber tips instead of vulcanite tips was found, after prolonged experiment, to afford insufficient protection owing to the fact that it was difficult to wedge it sufficiently tightly in the ear. Experiments are now being made with defenders embedded in rubber sponge, which are inserted between the ear and the receiver of the wireless telephones.

Physical Efficiency of Civilian Pilots.

66. The record of Imperial Airways during the three years 1925 to 1927 (approximately 2,400,000 miles flown and 54,000 passengers carried without serious accident) must be attributed, in part at least, to the careful medical selection and periodic re-examination of pilots of civilian passenger-carrying aircraft. These examinations are carried out by the Central Medical Board, and during the year an investigation was made to determine the physical efficiency index of such personnel.

67. As the successful pilots of the past have set the standard of the present, so the successful pilots of the present will dictate the standards of fitness of the future pilots. Such a policy makes increasingly for safety in the air, since, if any special bodily condition be found associated with lack of success in flying, that condition is noted and the regulations modified accordingly. The

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term, " any special bodily condition," is used rather than bodily " defect," since it must be understood that fitness for piloting duties in respect of public transport and goods requires special qualities, the absence of which cannot necessarily be termed defects in respect of everyday life. For example, the aeroplane pilot must possess a very high degree of accuracy of visual judgment if he is to fly, and particularly to land an aeroplane successfully, although he could get on quite well in ordinary life with far less accurate visual perception. He must also not be liable to air-sickness, although such a liability would hamper him but little in everyday life on the ground. He must also possess in very large measure a degree of general nervous stability which will keep him cool in emergency and will, even after long hours of flying or after flights in the rarefied air of high altitudes, leave him alert and self-controlled. He must also be endowed with such respiratory and circulatory efficiency that he can resist the effects of the cold and rare air of altitudes. Above all, he must not suffer from any disability likely to cause sudden incapacity in the handling of aircraft.

68. At present each nation is at liberty to raise the minimal requirements laid down by the International Commission for Air Navigation, and it may be stated that the requirements of physical efficiency of the British pilots represent a high standard. A definite physical efficiency index is allotted as the result of each examination so that at subsequent examinations an estimate can be formed as to whether there has been deterioration or otherwise as the result of the number of hours flown.

Method of Estimating Physical Efficiency Index.

69. The physical efficiency index is arrived at by allotting a maximum of 50 marks for full efficiency in the eight tests for respiratory and circulatory efficiency and general nervous stability, performed in the British examination. Marks are deducted for varying degrees of insufficiency, as shown in the following table :—

	Deduction.
(1) *Pulse rate—sitting—*	
Over 78 per minute	1
Over 84 per minute	2
Over 96 per minute	3
On changing sitting to standing—	
Increase of 24 per minute or over in first 5 seconds	1
Increase of 36 per minute or over in first 5 seconds	2
After exercise—	
Increase to 108 or over in first 5 seconds ..	1
Increase to 120 or over in first 5 seconds ..	2
Increase to 132 or over in first 5 seconds ..	3
Increase to 144 or over in first 5 seconds ..	4

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	Deduction.
Return to normal standing rate—	
Over 30 seconds	1
Over 45 seconds	2
Over 60 seconds	3
(2) *Blood pressure—*	
Systolic pressure—	
Over 130 mm. Hg.	1
Over 140 mm. Hg.	2
Over 150 mm. Hg.	3
Over 160 mm. Hg.	4
Diastolic pressure—	
Below 75 mm. Hg.	1
Below 70 mm. Hg.	2
Below 64 mm. Hg.	5
Above 90 mm. Hg.	1
Above 94 mm. Hg.	2
Above 98 mm. Hg.	5
Pulse pressure—	
Over 50 mm. Hg.	1
Over 60 mm. Hg.	2
Over 70 mm. Hg.	3
(3) *Breath-holding—*	
Under 70 seconds	1
Under 60 seconds	2
Under 50 seconds	3
(4) *Expiratory force—*	
Under 110 mm. Hg.	1
Under 100 mm. Hg.	2
Under 90 mm. Hg.	3
(5) *Knee jerks*	2
(6) *Tremor—*	
Slight, hands	1
Slight, eyes	1
Marked, hands	3
Marked, eyes	2
(7) *Self-balancing—*	
2 attempts	1 } For
3 attempts	2 } each
0 attempts	3 } side.
(8) 40 mm. Hg. Test.—*Time* :—	
Below 50 seconds	1
Below 45 seconds	3
Below 40 seconds	6

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	Deduction
Pulse rate—in 5 second periods—	
Gradual rise—starting 6 or 7	1
Gradual rise—starting 8	3
Immediate sustained rise to 8 or over ..	2
Immediate rise (in first 15 seconds) to 11 or over	3
Immediate rise to 12 or over	4
Marked immediate rise with subsequent rapid fall in rate (inside 40 seconds)	5

Fit = 40–50.
Doubtful = 35–40.
Unfit = under 35.

70. The result of the investigation shows that the average efficiency index for civilian pilots for all examinations is just below 45. When divided into special groups, e.g., regular transport pilots, instructors, test pilots, or those employed on joy-riding, etc., the average figure for each group remains approximately the same. The conclusion to be drawn from this result is that the regulations at present in use serve to ensure a high average standard of physical fitness.

71. *Evidence as to the necessity, or otherwise, of re-examination after* 250 *hours' flying.*—Although many of the above examinations were those carried out under the International Commission for Air Navigation regulations, which necessitates re-examination every six months, a very considerable number of examinations—especially of pilots employed on regular transport duties—were made in accordance with Air Navigation Directions which require re-examination after 250 hours' flying, should these be completed before the termination of six months. The figures obtained from the latter examinations show that :—

(i) Many pilots employed on regular transport duties appear for medical re-examination in approximately 2½–3 months—that is to say, two examinations, instead of one, are held within a period of six months.

(ii) In most cases there is no evidence of deterioration in physical efficiency at either the three-monthly or six-monthly examination, and the conclusion must be reached that, in most cases, an examination after a period of six months would have served equally well.

(iii) The flying hours per month of many of the pilots re-examined under these conditions are, on the average, 85–90 hours. It is noteworthy that such relatively long flying hours have not induced any appreciable degree of fatigue. It is to be pointed out, however, that when flying hours for one month had much exceeded 100 hours, there were certain signs of stress and physical deterioration—the efficiency index, in one case, falling from 49 to 35.

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72. *The value of medical re-examination.*—The figures show that re-examination is of value in enabling conditions, predisposing to flying fatigue, to be rectified early. In several cases, the carrying out of treatment recommended by the medical board, e.g., removal of tonsils, attention to teeth, etc., has been followed by marked improvement in efficiency.

73. *The value of occasional leave for those employed on regular flying duties.*—The efficiency figures demonstrate that occasional abstention from flying, taken definitely in the form of a holiday, is of value :—

(i) in preventing the onset of fatigue after strenuous flying hours ; or

(ii) cutting such fatigue short at a very early stage of development.

74. The index has proved of great service and was recently taken as the basis of discussion and recommendation of the number of hours which can be flown without medical re-examination. At the thirteenth session of the International Commission for Air Navigation it was decided to alter the recommendation in respect of 250 hours to one necessitating, in addition to the six-monthly overhaul, re-examination only when the pilot has flown 125 hours in any 30 consecutive days. This modification will, in effect, practically eliminate the necessity for re-examination in less than six months, and the proviso merely ensures that the health and nervous system of a pilot will not be unduly taxed by too much flying in any given period.

75. *Medical fitness and accidents.*—The physical efficiency index has also proved of value in ascertaining whether there is any reason to suppose that liability to accident is in any way associated on the part of the service pilot with defective physical efficiency (including also defective visual acuity or judgment, for which, for this purpose, a separate index was worked out). The term accident is here applied to any damage to the aircraft, extending beyond the undercarriage, wing skids, tail skid or airscrew, whether the pilot may or may not have been injured.

As a control standard of flying efficiency, the average indices were obtained of all officers granted permanent commissions from short service commissions during the years 1924–1925, and a contrast was made with those of all officers involved in accidents while piloting during the years 1924–1926. From these accidents were then selected those held to be due to fault on the part of the pilot, and the average indices of such pilots worked out. As a further control the efficiency of officers admitted during the years 1924–1925, who had met with no accidents while piloting, was

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compared with that of officers admitted during the same years who had met with accidents while so engaged.*

The results may be summarised as follows :—

	Efficiency index (Maximum = 50)	Visual index (Maximum = 50)
(1) Short service commission officers granted permanent commissions during 1924–25	44·84	49·33
(2) All officers, whether permanent or short service, involved in flying accidents while piloting aircraft during 1924–26	44·75	48·96
(3) Officers of group (2) concerned in accidents definitely due to error on part of pilot	44·75	49·19
(4) Short service commission officers admitted 1924–25, who met with no accidents while piloting (1924–26)	43·17	49·20
(5) Short service commission officers admitted 1924–25, who met with accidents while piloting (1924–26)	43·55	49·38

The conclusion is reached that the records examined show no evidence that lack of general physical efficiency (including visual efficiency) can in any way be regarded as a factor in the causation of accidents.

Hospital Orderlies' Training Depôt.

76. Until the end of 1926 the initial training of airmen of the R.A.F. medical branch was carried out by the Royal Army Medical Corps at Crookham Camp, Aldershot, but in February, 1927, a new R.A.F. unit was formed at Halton known as the Hospital Orderlies' Training Depôt, to undertake the initial training of these airmen to qualify them as hospital orderlies (unclassified).

77. The airman recruit, medical branch, receives two months' disciplinary recruit training on enlistment at the R.A.F. Depôt, Uxbridge, before being posted to the Hospital Orderlies' Training Depôt, Halton, where he undergoes a three months' course of technical training and is then passed out as a hospital orderly

* In the case of the first control group, namely, the short service commission officers granted permanent commissions, the average efficiency index was calculated from the results of their medical examinations at the time they were granted permanent commissions; in the second control group and in the other groups of officers for whom average efficiency indices were calculated, the data for these indices were obtained from the latest information available.

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(unclassified). He proceeds to a R.A.F. hospital unit at home to continue practical nursing training, to enable him to remuster to nursing orderly—Group " C."

78. Broadly, the syllabus of training at the Hospital Orderlies' Training Depôt consists of instruction in :—

(i) Elementary anatomy and physiology.
(ii) First aid.
(iii) Elementary nursing procedures.
(iv) Elementary hygiene, sanitary and water supply duties.
(v) Squad and stretcher drill and physical training.
(vi) Matters of service, routine, e.g., barrack-room duties.
(vii) Instruction for the leading aircraftman's certificate of education.

79. Two courses of instruction were held during the year at which 67 out of 76 airmen passed out of the depôt as hospital orderlies (unclassified) Of the remainder, three were removed from their course as inefficient, one purchased his discharge before the completion of instruction, two were discharged as medically unfit, one remustered to another trade on request, and one remained in hospital at the end of the course.

80. The policy of attaching newly-joined medical officers to the depôt for a short course of instruction has already been referred to earlier in this report on page 43. During 1927, three courses were held which were attended by 17 officers entered on short service commissions and attached from the Central Medical Board. Sixteen officers completed their instruction which for the first two courses covered a period of six weeks but was extended for the third course to cover eight weeks, while one resigned his commission before completing the course.

81. Briefly, the syllabus of instruction for medical officers consists of lectures, practical work and demonstrations on the following subjects :—

(i) *Under the direction of the Commanding Officer, Medical Training Depôt.*

(*a*) Air force organisation, Air force law, King's Regulations and Air Council Instructions.
(*b*) Responsibilities and duties of an officer in medical charge of a unit or station.
(*c*) Medical stores.
(*d*) Accounting for R.A.F. equipment at sick quarters.
(*e*) Hospital routine—medical personnel.
(*f*) Squad drill and stretcher drill.

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(ii) *Under the direction of the Commanding Officer, R.A.F Pathological Laboratory, Halton.*

(*a*) General laboratory routine.

(*b*) Pathology, bacteriology, diagnosis, treatment and prevention of tropical diseases.

(*c*) Hygiene and sanitation, with special reference to field sanitation. This subject includes practical demonstrations at the School of Hygiene, Uxbridge, and the Burroughs Wellcome Research Laboratory, London.

(iii) *Under the direction of the Commanding Officer, Princess Mary's Royal Air Force Hospital, Halton.*

(*a*) Special emergency treatment, e.g., blood tranfusions, gas gangrene, etc.

(*b*) Duties of orderly medical officer in a hospital.

(*c*) Practical instruction on airmen's sick parades.

(iv) *Additional lectures on the following subjects by the respective specialist officers.*

(*a*) Medical examination of airman recruits.

(*b*) Medical aspects of chemical warfare.

(*c*) Medical selection and care of flying personnel, including the practical examination of personnel at the Central Medical Board.

(*d*) The effects of high altitude flying, with reasons for the administration of oxygen.

(*e*) Preventive hygiene in relation to flying.

(*f*) Throat, nose and ear conditions in relation to flying personnel.

(*g*) Ophthalmic conditions in relation to flying personnel.

Physical Efficiency of Serving Officers of the Royal Air Force.

82. Each officer and airman pilot in the Royal Air Force is medically examined each year, and the results are recorded on special forms. A small percentage, however, is missed each year owing to certain officers and airmen being patients in hospital at the time of the examination or for some other unavoidable reason, and the total number of forms received does not tally exactly with the strength of officers and airman pilots.

83 During 1927, forms for 2,071 officers liable to full flying duties if medically fit, for 294 officers not called upon to fly, and for 681 officers of the ancillary services, were received and are commented upon in the following paragraphs.

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84. Table XXII, page 78, shows the physical assessment of all officers at home and abroad who are called upon to fly for the years 1922–27. The figures for the years prior to 1924 are not strictly comparable with those of later years owing to slight variations in the rank and ages of officers required to fly. Of the total of 2,071 officers examined, 1,827 were found to be fit for full flying duties. The percentage unfit for full flying duties in 1927 is slightly lower than during the preceding three years, but is considered very satisfactory as officers who on the date of examination were temporarily unfit in any way are included in the column unfit for flying duties, and many who are shown as unfit for full flying duties were fit for flying duties excluding piloting. Of the total of 239 airman pilots, 229 were found fit for full flying duties.

85. Table XXIII, page 79, analyses certain of the physical efficiency tests carried out on the 2,071 officers and 239 airman pilots referred to above. The tests analysed are selected as being capable of a definite positive or negative value, and the analysis is primarily made with the intention of correlating the final assessment of fit or unfit with the positive or negative results of individual tests.

86. Table XXIV, page 80, gives the average results of the remaining physical efficiency tests, which are capable of numerical expression, among the officers and airman pilots who were classified as fit for full flying duties. The table is intended to compare the average standards of officers and airman pilots as two types of pilot by age groups in each type and by relative age groups. The average result for airman pilots compares very favourably with that for officers. Excluding the age and weight tests, the groups 25–30 among airman pilots and 31 and over among officers give the best results, although among the officers there is little difference between the second and third groups. The second group among airman pilots, however, shows the best results. Comparing the two types of pilot, group for group, the average result among the officers is slightly better than among airman pilots.

87. Table XXV, page 82, analyses the causes of unfitness of the 244 officers found unfit for full flying duties. The chief cause of unfitness during 1927, as in 1926, was medical. Defective vision, which in 1925 was the commonest cause of unfitness and in 1926 occupied second place in order of frequency, occupies third place in 1927.

88. Of the 294 officers of the general duties branch who were not called upon to fly, 127 were found fit for full flying duties, 125 at home or abroad and two at home only; 29 for limited flying duties, 26 at home or abroad and three at home only; 31 as combatant passengers, 30 at home or abroad and one at home only; and 90 as non-combatant passengers, 69 at home or abroad and 21 at home only. Fourteen were classified as fit

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for ground duties, five at home or abroad and nine at home only; two as temporarily unfit for any form of flying, but fit for ground duties at home or abroad, and one as temporarily unfit for any form of duty. Of the 681 officers of the ancillary services—stores, accountant, medical, dental, legal and chaplains branches—673 were found to be fit for the full duties of their branch, which includes flying as non-combatant passenger, 656 at home or abroad and 17 at home only; three were found permanently and one temporarily unfit to fly as passenger but fit for full duties at home or abroad on the ground only; while five were found permanently unfit to fly as passengers and fit for ground duty at home only.

Medical Examination of Recruits.

89. During 1927 the only recruiting depôt open was in London. The average number of civilian medical practitioners employed at the end of each month in carrying out the preliminary examinations in the provinces was 70 and the total number of recruits (over 18 years of age) examined by them was 3,894, of whom 1,846 were rejected.

90. At the London depôt, 5,256 recruits (over 18 years of age) were examined during the year (including the 2,048 sent forward by civilian medical practitioners), of whom 3,060 were accepted as medically fit and 2,453 were finally enlisted. At Halton, 1,030 aircraft apprentices (14–18 years of age) were enlisted.

It is of interest to note than of the 3,060 recruits accepted as medically fit, 588, or 19 per cent., had never been vaccinated.

91. Table XXXI, page 86, shows the relative normal weight and measurements on which the examining medical officers base their opinions as to the suitability of applicants for service in the Royal Air Force. There is no minimum standard of height for aircraft apprentices, but a minimum of 5 ft. 2 in. is demanded for the acceptance of an adult recruit except for a skilled tradesman whose case, if he is otherwise fit but fails to reach the minimum standard of height, is submitted to Air Ministry for decision. No standard of weight or chest measurement is required of recruits, but the medical officer is guided in his selection by the correlation table to which reference has been made above.

92. The average height, weight and chest measurement of the aircraft apprentices enlisted during 1927 were 5 ft. 5 in., 118 lb., and 33·2 in.; and of recruits (over 18 years of age), 5 ft. 6·5 in., 128 lb., 35·6 in., respectively.*

* These averages are calculated on a total number of 3,393 record cards received during the year in respect of both classes of recruit. The discrepancy between the number of cards received and the figure for enlistments given in para. 90 is due to the carry-forward at the end of each year of a number of cases for which cards have been prepared on acceptance as medically fit, but which are not actually enlisted until the following year.

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93. The causes of rejection among the 2,196 applicants who were not accepted at the recruiting depôt are analysed in table XXVI, page 82. In 1927, 1926 and 1925, the chief cause of rejection was " loss or decay of many teeth " ; the next most frequent cause was " deformities of feet " in 1927 and 1926, and the third in 1927 and 1926 was " poor physique " ; the second place in 1925 was taken by " diseases of the heart," which came sixth and third in 1927 and 1926 respectively in order of frequency.

Hygiene.

94. *Accommodation.*—Steady progress is being made in quartering the Royal Air Force, both at home and abroad, in solid and comfortable buildings of the types adopted as standards for new permanent construction. There is still a residue of officers and airmen living and working in temporary buildings, many of which were erected ten or more years ago under the pressure of war-time conditions, which do not provide the full standard of comfort necessary to enable men to do their best work ; but these buildings will gradually disappear as money becomes available for the purpose of new construction, the general principle followed being to replace first the least satisfactory of the more important buildings. Though it occasionally happens that the number of persons allotted to a particular building is exceeded, there is no persistent overcrowding.

95. *Sick accommodation.*—The many types of sick quarters that have been erected during the last ten or twelve years are being gradually reduced to three or four standard types at home. Abroad, standardisation is in abeyance as the climatic conditions at one station may be radically different from those at another. At stations of the Special Reserve and Auxiliary Air Force, where the medical officer is normally a civilian medical practitioner, practising locally, the sick quarters consist of two rooms with no specific accommodation for the retention of sick, though it is under consideration to add to these a small ward of three or four beds, primarily intended for the treatment of minor ailments of short duration requiring only the general supervision of a medical officer, with the secondary object of providing encouraging work for trained nursing orderlies.

96. The opening of a new R.A.F. general hospital at Halton on 31st October, 1927, by H.R.H. Princess Mary, Viscountess Lascelles, marks an epoch in the history of the medical service of the Royal Air Force. As this building has attracted considerable notice, scale plans of the two floors are shown on pages 87 and 88. It is the product of several years of careful study and, while it is recognised that the perfect hospital is yet to be designed, Princess Mary's Royal Air Force Hospital represents much of the best in modern hospital construction. It would not be appropriate in this report to give a detailed technical account of the design and construction, but the following are some of its salient features.

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97. The site is about 300 yds. from the Wendover–Tring road, and considerably higher than it, and gives an uninterrupted view across the valley. The main aspect is south-westerly. The shape, as will be seen on reference to the plans, is a multiplication of the letter H, so as to allow free access of light and air to all parts of the hospital without undue separation of its component parts. There are five main wards on the ground floor and four on the first, so that there is room for the future addition of three wards. The accommodation at present is 204 beds, including 20 for officers, three for nursing sisters, and 23 for airmen's wives and children.

98. The sanitary tower system is used, whereby the sanitary annexes are directly accessible from the special case wards as well as the main wards, and are themselves open to the air on all four sides, the connecting links between them and the respective wards being at one corner of the towers. The floors of the operating theatres are self-draining; they can be very quickly swilled and squeegeed dry, all refuse passing through a gap in the bottom of one of the walls into a shallow recess in the floor, where it can be examined and disposed of by attendants outside the theatre. Throughout the hospital full use is made of coved skirtings (rounded corners and angles) so as to avoid the accumulation of dust there. The wards are heated by the ideal combination of low temperature central heating plus open fireplaces, so that while the whole building is kept "with the chill off" patients have in addition the cheerfulness of the open fire. The decoration of the children's ward includes nursery dadoes placed at cot level. The operating table is lighted by means of a skialytic lamp which throws virtually no shadow, and this, as well as the general lighting of the theatre, is so wired that in the event of the current failing the operation of a switch on the wall (the position of which is indicated by a constantly glowing red light) throws-in an alternative supply from accumulators. The walls of the theatre are specially tinted to avoid eye fatigue. A large quantity of rubber flooring formerly laid in their exhibit at Wembley was presented by the Rubber Growers' Association and is now laid in some of the wards and corridors. There is as yet no provision for artificial sunlight, but a flat roof is available for treatment by natural sunlight.

99. *Recreational facilities* are being steadily improved throughout the Royal Air Force. Within certain limitations of entitlement there is a degree of elasticity so that the special needs of each station on account of climate, type of personnel, proximity to towns, etc., can be considered. Swimming baths are unfortunately so costly that they are provided at few stations, but where they are not, alternative arrangements are usually made for bathing (as distinct from taking baths). Adequate provision for recreation is nowhere more necessary than in hot countries, where monotony is a potent source of unfitness.

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100. *Food.*—The critical examination to which all foodstuffs are subjected before acceptance by the Royal Air Force has resulted in the absence of any outbreak of disease due to detectable dirt or disease in them. In hot countries it is sometimes necessary to deal with an outbreak of intestinal disease by forbidding the eating of fresh fruit and vegetables, as these cannot be regarded as safe even after a more or less thorough washing in a disinfectant. In such cases some of the most valuable portions of the diet are lost, and the question of supplying from an alternative source some of the vitamins contained in those portions has been receiving attention. By way of an experiment based on published research, a consignment of concentrated orange juice has been used in Iraq, as indicated in the report for 1926, and there is evidence that after 15 months storage in that country it has undergone no material loss in vitamin-content. An extract of yeast is also used.

101. *Water Supplies.*—These are examined at least once a year, and more often if there is any suspicion of contamination. In general they are excellent, though some examples show slight defects traceable to temporary and remediable conditions. There are, however, a few waters that have given much trouble because they are below the standard of purity and no alternative source of supply is available. These exceptions are treated before use and analysed more frequently. Four Paterson's Chloronomes are in use at Helouan, Moascar and Aboukir in Egypt, and Sarafand in Palestine, and are quite satisfactory in spite of the water that they treat being grossly polluted.

102. *Conservancy.*—Many systems of sewage disposal are represented at various R.A.F. stations, and there have been very few complaints. At Ascot the surface water drainage was found to be unduly contaminated and it was only after repeated investigation that the origin of this was traced to indiscriminate urination against walls, etc., by civilians.

103. *Meteorological Note.*—Reports from Iraq, Egypt and Malta all indicate unusually severe hot weather, which began early and lasted long, although the maximum temperatures were not excessive. This is to some extent reflected in the statistics of morbidity. Although the normal rainfall at Aden in April is only one-fifth of an inch, between 13th and 17th April nearly 4 in. fell there in 1927, and the R.A.F. station and aerodrome were flooded, much damage being done. Earthquake shocks were felt on 11th July, slightly in Egypt, and severely in Palestine, where they caused material, but not personal, damage to the Royal Air Force. There were, however, many casualties among the native population and the personnel of the Palestine General Hospital was continuously occupied in consequence for 48 hours.

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POINTS OF INTEREST IN CONNECTION WITH CERTAIN DISEASES.

104. *Anthrax.*—One case occurred and was traced to some foreign made pants. Prompt measures of destruction and disinfection were taken and no further case developed.

105. *Beri-beri.*—There were at Aden eight cases of an obscure disease, in some respects resembling beri-beri; after much consideration there is still some doubt whether these cases of multiple neuritis were of dietetic or infective, or even psychological origin.

106. *Cholera.*—This disease was reported in July as spreading up the Persian Gulf, and reached Baghdad towards the middle of October. Conditions were favourable for a severe epidemic, the great heat and the large number of pilgrims contributing to this, but the active measures taken by the civil health department delayed the spread and even stamped out the epidemic in Basrah before the hot weather was over. In addition, it was decided to inoculate all native labourers, numbering some thousands, and this was completed by the end of August.

107. *Diphtheria.*—There was an outbreak of diphtheria at the R.A.F. Depôt, Uxbridge, in June, lasting one month and affecting 30 persons. Very active measures, including over 1,100 Schick tests and the immunisation of all non-immune contacts, were instituted, and no further spread occurred. It is of interest that the results of the Schick tests thus carried out were equally divided between positive and negative (498 : 502).

108. *Enteric Group.*—There were 25 cases in Iraq, with four deaths, and a careful investigation, without positively identifying the origin, suggests that it lay in some cases in the eating of infected fruit or vegetables and in others in the unrecognised presence of a carrier, and throws emphasis on the timing of prophylactic inoculation so that the period of maximum resistance covers the period when infection is most likely, and on the fact that local purchase in hot countries is not a satisfactory means of supplying fresh fruit and vegetables, being hygienically inferior to growing them in cantonment gardens, where adequate supervision is practicable.

109. *Effects of heat.*—There were three cases in India, four in Iraq with one death, and none in the Middle East area.

110. *Influenza.*—Prophylactic inoculation against influenza, which has hitherto given somewhat uneven results in skilled hands, was practised on 731 airmen out of about 2,100 in the Coastal Area. There were 77 cases of influenza among these airmen; 67 in the uninoculated, six in the inoculated, and four unchecked. Of the six known to have been inoculated, four had not been inoculated since the previous year, and their attacks were mild.

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111. *Malaria.*—In India malaria shows a general decrease, but the incidence rate is still high. The policy of mosquito-proofing quarters has been adopted and, if justified by results, will be extended as finances permit throughout the command. In the Middle East area it shows a much greater increase than in any previous year, principally because of cases contracted during reconnaissances in the region of Azrak. But even without this outbreak, there has been a progressive increase in primary malaria in Egypt since 1922, the number of cases occurring in the years 1923–27 being 5, 13, 22, 35 and 60 respectively. It appears that a further rise may be expected next year, but that if the Egyptian Health Authority keeps to its present declared policy of draining the " birkas " around No. 4 Flying Training School, Abu-Sueir, and the R.A.F. Depôt, Aboukir (where there were 42 cases this year) this increase should go no further.

112. *Rabies.*—Anti-rabic (Pasteur) treatment was given in Iraq to twelve persons, and no case of rabies occurred.

113. *Sandfly fever.*—This disease will always affect a certain number of the garrisons of such countries as India and Iraq as the drastic measures that would be necessary to give a fair chance of completely eradicating it not only are too costly, but also involve too great a reduction of the amenities of life to be justified. The measures practised with the object of suppressing sandfly fever are the same as have been used and reported on hitherto, as also is the policy of carrying these measures no further than a limit set by the balance between cost and gain, using both these terms in their widest sense. It is recognised that this disease is both temporarily incapacitating and distressing, but beyond this it is regarded as being of relatively slight medical importance.

114. *Schistosomiasis* did not occur in the Royal Air Force during 1927.

115. *Smallpox.*—No case occurred in the Royal Air Force during 1927. In the year ending 31st March, 1927, the number of tubes of calf lymph issued by the Government Lymph Establishment was 7,236, less 1,332 returned unused, i.e., 5,904. Results were reported in 4,472 cases. Of these results, primary vaccinations showed case-success in 98·0 per cent. and insertion-success in 92·4 per cent., and revaccinations case-success in 80·3 per cent. and insertion-success in 68 per cent.

116. *Venereal Disease.*—The incidence rate of venereal disease continues to be low in the Royal Air Force and it is possible that the systematic use of special cinematographic films prepared for the purpose may have contributed to some extent.

117. *Miscellaneous.*—Bed bugs were found to infest certain quarters in Egypt and Palestine and were effectively attacked with zyklon-B, a German preparation giving off hydrocyanic (prussic) acid.

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118. Owing to the difficulty of providing the crews of armoured cars in Iraq with an adequate supply of drinking water, a simple and effective process has been devised for rendering potable small quantities of raw water.

119. Every flight lieutenant of the general duties branch must now pass a simple examination in hygiene before he may be promoted to squadron leader. The results of these examinations are published periodically and are encouraging. The object of the examination is to ensure that every officer on reaching the rank of squadron leader has a working knowledge of the basic laws of hygiene and their commoner applications, which is confidently expected to raise the already high standard of sanitation in the Royal Air Force.

Vaccination and Inoculation.

120. *Vaccination.*—Drafts totalling 1,258 airmen left the United Kingdom, all having been recently vaccinated. Primary and secondary vaccinations performed at home during the year numbered 9,818, equivalent to a ratio of 456·0 per 1,000 of strength, compared with 235·3 per 1,000 in 1926, 244·4 in 1925, 275·6 in 1924, and 378·6 in 1923. Abroad, 798 vaccinations were performed recording a ratio of 92·8 per 1,000 of strength, as compared with 259·7 in 1926. The vaccination state of the total force continues to be satisfactory.

121. *Inoculation.*—At home, 72 persons received one dose of T.A.B.C. vaccine and 2,005 two doses. Abroad, 5,837 inoculations were performed, of which 5,261 were single doses, being distributed as follows :—Mediterranean, 126 one-dose, 127 two-dose ; Middle East, 1,971 one-dose, 137 two-dose ; Iraq, 1,740 one-dose, 282 two-dose ; and India, 1,424 one-dose, 30 two-dose. A high inoculation state was maintained amongst all personnel both at home and abroad.

Instruction in Hygiene.

122. In addition to the lectures and practical instruction in sanitation given by medical officers at all stations to officers and airmen, further facilities are afforded at the R.A.F. Depôt, Uxbridge, for all ranks to supplement what they have already learned or to refresh their memories on this subject before examination for promotion or on proceeding abroad.

123. Under the direction of one officer and two N.C.Os. of the medical branch, assisted by a coppersmith and a carpenter, a museum was formed at the Depôt towards the end of 1926 and, by the end of 1927, 67 models of the most up-to-date appliances and devices employed in both barrack and field sanitation had been completed and were available for exhibition and demonstration.

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124. The coppersmith and carpenter were employed exclusively in the making of these models, but the officer and N.C.Os. undertook this work in addition to their routine duties at the station. In the beginning a small amount of material was drawn from stores for model-making, together with the necessary carpenter's and coppersmith's tools, but during 1927 only waste material in the Depôt was used for this purpose with the result that the cost of the undertaking was reduced to a minimum.

125. The museum is open on Monday, Tuesday, Thursday and Friday from 08.30 hours to 16.00 hours, and on Wednesday and Saturday from 08.00 hours to 12.00 hours. During 1927 two series of demonstrations were given to 25 airmen of the medical branch from the Medical Training Depôt, Halton, of whom 20 were eventually remustered as sanitary assistants. Two hours' instruction were given to 112 newly joined officers on short service commissions in general hygiene, water supplies, Horrocks's test, the water cart, the preservation of health in the tropics, and demonstrations of museum models. During the latter six months of the year, 1,640 recruits received from one to five hours' instruction.

126. In addition, the models were demonstrated and explained to several parties of officers due to sit for examination for promotion to squadron leader, in particular the water cart and Horrocks's test, and the benefit derived from these demonstrations was clearly reflected in the answers to examination questions on these subjects. During the posting season all drafts were as a routine measure marched to the museum and given half-an-hour's demonstration.

127. This is the first complete year since the scheme was started towards the end of 1926, and it is held to be amply justified by many considerations, notably the numbers attending the lectures and demonstrations, in many cases voluntarily, amounting to over 2,500 a year, the keen interest taken by all ranks, the good elementary knowledge of the principles of hygiene and their commoner applications shown by all ranks examined in this subject, and the fact that in spite of the considerable amount of work entailed by this instructional scheme, no additional personnel are absorbed by it beyond two tradesmen, duly employed in their respective trades.

Pathological Work performed in R.A.F. Laboratories.

128. The total number of routine specimens examined in the R.A.F. pathological laboratories in the United Kingdom and abroad, during 1927, amounted to 24,637 ; that is, 7,615 less than during the previous year. This decrease in pathological material was due chiefly to the reduction in the number of personnel

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serving in Iraq—thus, the numbers of specimens examined at Basrah during 1926 and 1927 respectively were 7,029 and 1,991. A synopsis of the work done in each laboratory is shown in table XXVII, p. 83.

R.A.F. Pathological Laboratory, Halton

Routine Work.

129. There has been a steady increase in the amount of biochemical and hygiene work carried out in the laboratory at Halton. Most of the biochemical work has been done in connection with the modern clinical investigation of cases. The increase on the hygiene side has originated in the expansion of the Royal Air Force at home—the water supply and sewage disposal of all R.A.F. stations in the United Kingdom being analysed at least once a year.

130. The following stock vaccines were prepared and issued for use in the Royal Air Force at home and abroad during the year :—

Acne and staphylococcus	1,320 c.c.
Cholera	4,500 c.c.
Gonococcus	150 c.c.
Influenza	4,800 c.c.
Pneumococcus	300 c.c.
Staphylococcus	675 c.c.
Streptococcus	275 c.c.
T.A.B.	16,200 c.c.

Teaching.

131. Courses of instruction in pathology, hygiene and tropical medicine were inaugurated for newly joined medical officers and for orderlies undergoing training to qualify as laboratory assistants.

132. *The medical officers course.*—This course was designed to fit medical officers for future duties with units at home and abroad, keeping in view the primary object of the R.A.F. medical branch, namely, the prevention of disease. For this purpose the general plan in dealing with each disease was to give a simple outline of the causal organism, if any ; the medium or vector of transmission ; and the portal of entry, spread and lesions produced in the body of man. From these elementary facts the appropriate symptoms, treatment and preventive measures were constructed. Each course extended over a period of eight weeks, the afternoons being devoted to the study of hygiene and tropical diseases. The lectures were illustrated by suitable practical demonstrations daily, and the whole course was consolidated by visits to the hygiene museum at the R.A.F. Depôt, Uxbridge, and to the Museum of the Wellcome Bureau of Scientific Medicine, London.

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A scheme of the work carried out is given in para. 136. Twenty medical officers attended this course during the year of its inception.

133. *The laboratory assistants' course.*—This course was raised to a higher standard in 1927, as it was found that the type of airman attracted to the trade of laboratory assistant was capable of reaching this higher level and keen to do so, especially as it would fit him for useful work in civilian life at a future date. The course was carried out in practice according to a set table of work arranged in such a fashion that the airmen would learn their trade in the order required for the organised performance of their duties. In this manner, they helped with, and gradually took over, certain routine work in the laboratory. Particular care was taken in drawing up the curriculum to avoid monotony by varying as much as possible the order in which instruction in the several subjects was given. The detailed syllabus and table of work are given in paras. 137 and 138. Four airmen received instruction as laboratory assistants during the year.

134. *Pathologist's course.*—Two medical officers received instruction to fit them for duty as clinical pathologists at R.A.F. laboratories abroad.

Investigations.

135. Among the various investigations carried out during the year, three require brief mention.

(i) An outbreak of scarlet fever at Halton.
(ii) A diphtheria epidemic at Uxbridge.
(iii) A case of indigenous undulant fever at Tangmere.

(i) The scarlet fever outbreak at Halton commenced in January, 1927, among the aircraft apprentices of No. 4 Wing, School of Technical Training. There were six cases and they were confined to one squadron in this wing. Furthermore, those who contracted scarlet fever occupied in every instance the second bed from the corner of the dormitory, but not always the same dormitory ; the corner bed was occupied by an aircraft apprentice. Investigations showed that a certain aircraft apprentice had been moved from one dormitory to another and that his movements coincided (allowing for the incubation period) with the occurrence of each case of scarlet fever in the bed next to the one he occupied. This aircraft apprentice, a month previously, had been in hospital suffering from tonsillitis ; inquiry revealed that he had at that time a slight erythema and was most probably a missed case of scarlet fever. The outbreak of scarlet fever terminated with his isolation.

(ii) The diphtheria epidemic at the R.A.F. Depôt, Uxbridge, began on 21st June, 1927, and between that date and 19th July, 1927, there were 28 cases. These cases did not show clinical

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signs of diphtheria, but from the throat of each virulent diphtheria bacilli were isolated. This outbreak, occurring among recruits of a highly susceptible age, had the appearance of becoming a large epidemic. The spread of the disease was cut short within a month, probably owing to the prompt isolation of all clinical cases of diphtheria, suspects and contacts, and to the bacteriological technique employed. The procedure followed was to isolate all contacts, including every occupant of the dormitory in which a case of diphtheria (or suspect or carrier) had occurred; these contacts had their throats swabbed and bacteriologically examined for three consecutive days. In addition, they were Schick tested and the non-immunes were given 500 units of diphtheria antitoxin. The results obtained justified the time spent in carrying out these bacteriological investigations.

(iii) A case of undulant fever occurred at Tangmere in an officer who had never been out of the United Kingdom. Investigations carried out at Tangmere included a review of the patient's recent movements, an inquiry into his diet with special reference to milk and its products, and specific serological examination of the blood of all those engaged in handling food at that station, and of all possible close contacts with the patient. No evidence pointing to the source of infection was found at that time. At a later date, however, a further case of undulant fever was diagnosed in an officer who had recently served in Egypt. It transpired that he had suffered from recurring attacks of pyrexia for some months previously, and had lived for part of that time in the same mess (but not at Tangmere) as the indigenous case referred to above.

Medical Officers' Course of Instruction.

Applied Pathology, Hygiene and Tropical Medicine.

136. The following is a synopsis of the lectures and demonstrations in connection with the medical officers' course :—

Lecture.	*Subject.*
(1.)	General scope of work: co-operation with different branches of the service: general preventive measures: keeping of sanitary diary.
(2.)	*Vaccines and sera* in common use at R.A.F. stations: how and when demanded: taking on charge (Forms 600, 1209, and 1214): disposal of time-expired material: quantities to be kept at station: best time to inoculate and re-inoculate: technique of administration: record of, in Form 48, and keeping of vaccination and inoculation register: outline of a lecture to encourage airmen to submit to protective inoculation and vaccination.

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Lecture.	*Subject.*
(3.)	*Collection and transmission of laboratory specimens.*—Details regarding water, sewage, food and pathological specimens: recording of results of laboratory examinations on Forms 41 and 39: breakages in transit: general laboratory routine: Form 3212—laboratory report form.
(4.)	*Blood examination and simple stains.*—Making of blood films: blood counts: collection of blood for Wassermann, Widal tests and blood culture: value of blood examination in investigating cases of fever, especially abroad.
(5.)	*Investigation of outbreaks of disease.*—Carriers: isolation: quarantine: disinfection.
(6.)	*Troopships—general hygiene and sanitation.*—Captain's and Commanding Officer's inspection: venereal diseases: notifiable diseases: disinfection: inoculation *en route*: dangers at ports of call. *Troop train.*—Duties of officer in medical charge of, with special reference to warm climates.
(7.)	*Malaria.*—Types: distribution: life cycles of malaria parasites in man: examination of blood films for malaria.
(8.)	*Malaria.*—Summary of pathology to indicate symptoms and lines of treatment: detailed treatment with quinine, quinine and alkalies, and arsenical compounds.
(9.)	*Malaria control.*—Cycle of malaria parasite in mosquito: life history and bionomics of mosquitoes: human carriers: animal carriers: general preventive measures.
(10.)	*Blackwater fever.*—Etiology, symptoms, treatment and prevention: investigation of cases of hæmoglobinuria and hæmaturia: treatment of acidosis in general.
(11.)	*Bowel diseases.* *Constipation and diarrhœa.*—Dangers of. *Dysentery.*—Types: distribution: summary of pathology and symptoms: specimens illustrating essential points in the disease
(12.)	*Dysentery.*—Diagnosis: *fæces examination.* Treatment: Salines, *serum*, *emetine*, colonic lavage.
(13.)	*Liver abscess and sprue.*—Etiology: symptoms: diagnosis: treatment: prevention: anæmia accompanying sprue—value of liver treatment.

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Lecture.	*Subject.*
(14.)	*Dysentery control.* *Carriers*—cooks, mess waiters, nursing staff. *Flies*—latrine, kitchens, larders, messes. *Water*—sterilisation of water: soda water factories and ice-plants. *The cookhouse and canteen in the tropics.*
(15.)	*Enterica.*—Types: summary of pathology, symptoms and treatment. Value of *early diagnosis of cases of pyrexia.* *Prophylactic vaccination.*—Methods of investigation: prevention. Duties in a *convalescent depôt.*
(16.)	*Cholera.*—Endemic areas: seasonal incidence: summary of pathology, symptoms and treatment. *Intravenous transfusions.* Preventive measures with special reference to the *danger of eating fresh fruit and vegetables abroad.*
(17.)	*Food and food poisoning.*—Similarity between food poisoning and such diseases as cholera, dysentery and enterica: pathology, symptoms, treatment and investigation of outbreaks of food poisoning.
(18.)	*Food inspection.* *Tinned foods*: naked eye and laboratory inspection of food: collection of milk samples: simple tests for purity of milk, bread, flour, butter, tea, meat, sausages, eggs, and fish. Visit to *ration store, kitchen and canteen.*
(19.)	*Water and sewage.*—Duties of medical officer regarding these: purification: chlorination: routine examination of: requests for special examinations: disposal of sewage and sullage water in temporary camps and in warm climates. Visit to *sewage works and stables.*
(20.)	*Camps.*—Choice of site: general lay-out (prevailing wind, water supply, natives): construction. Details regarding *water supplies, latrines, cook-houses, ablution places, incinerators, sick quarters.* *Inspection of camp incinerators.* *Constructing a field latrine.*
(21.)	*Ancylostomiasis.*—Simple life cycle of worm: pathology, symptoms and treatment: prevention.
(22.)	*Bilharziasis.*—Types: geographical distribution: simple life cycle of worm: pathology, symptoms and treatment: prevention: *control of bathing*: visit to *swimming bath.*

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Lecture.	*Subject.*
(23.)	*Undulant (Malta) fever.*—Types :—M. melitensis : M. paramelitensis : B. abortus. Geographical distribution : modes of infection : pathology, symptoms and treatment : prevention.
(24.)	*Sandfly diseases.*—Sandfly fever and leishmaniasis : life history of the sandfly. *Sandfly fever.*—Etiology : symptoms : diagnosis : treatment : comparison with dengue and other short fevers.
(25.)	*Sandfly diseases* (continued). *Leishmaniases.* *Oriental sore and kala-azar.* Etiology : symptoms : diagnosis : treatment. *Technique of intravenous tartar emetic.* *Peventive measures against sandflies.*
(26.)	*Spironematal infections.* *Syphilis.*—Prevention and early treatment of venereal diseases : outline of lecture for airmen on venereal diseases : practical demonstration of treatment of cases of venereal disease, and collection of material for laboratory examination.
(27.)	*Spironematal infections*—(continued). *Relapsing fevers.*—Types : geographical spread : relation to lice and ticks : pathology, symptoms and treatment : prevention—de-lousing and anti-tick measures. Visit to *disinfectors.*
(28.)	*Typhus.*—European and tropical types : relation to lice, ticks and mites : pathology, symptoms and treatment : prevention as for relapsing fevers and trench fever. *Trench fever.*—Main points in this disease.
(29.)	*Plague.*—Types : geographical distribution and spread : relation to rats and fleas : pathology, symptoms and treatment. *Prevention.*—War on rats and fleas : Haffkine's vaccine : Yersin's serum. *Dangers of contracting diseases in native bazaars.*
(30.)	*Heat effects.*—Types : pathology, symptoms and treatment : prevention of—work, dress, anti-glare glasses : invaliding for. *Snake-bite.*—Recognition of commoner snakes : pathology and symptoms : general treatment for all snake bites : anti-snake measures in warm climates.
(31.)	*Visit to Hygiene Museum, R.A.F. Depôt, Uxbridge.*
(32.)	*Visit to Museum of the Wellcome Bureau of Scientific Medicine, London.*

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Syllabus of Training for Laboratory Assistants in the Royal Air Force.

137. The training for laboratory assistants is divided into three sections :—

(i) Physics and chemistry.
(ii) Hygiene.
(iii) Pathology.

(i) *Physics and chemistry* to include a working knowledge of English and metric weights and measures : specific gravity : solids, liquids and gases : temperature and pressure : boiling and freezing points : dew point : thermometers (clinical, chemical, maximal and minimal) : Charles' law : Boyle's law : Graham's law : conduction, convection and radiation of heat : evaporation : lenses (plane, convex and concave) ; spectroscope : elements of electricity—direct and indirect currents ; positive and negative poles ; pole finding ; resistances ; voltage.

Atom, molecule, atomic and molecular weights : elements, compounds and mixtures : organic and inorganic substances : chemical symbols : acids and alkalies : neutralisation : salts, crystalloids and colloids : solutions (saturated, standard and normal) : emulsions : precipitates : sediments : filtrates : meaning of anhydrous, hygroscopic and deliquescent : recognition of the commoner chemical reagents, testing for their purity ; labelling and storing them in the laboratory.

Structure, use and care of such apparatus as test-tubes, beakers, filter funnels, filter paper, pipettes, burettes, graduated cylindrical measures, watch-glasses, wash-bottles, siphons, tripods, filter stands, retort stands, boiling flasks, distillation flasks, condensers, stills, evaporating dishes, crucibles, spatulas, dessicators, drying ovens, water and sand baths, balances, hydrometers, thermometers, barometers, comparators, colorimeters, fume chambers, exhaust pumps, bunsen burners, fish-tail burners, blow pipes.

Simple methods of glass-blowing and drawing, and general construction of apparatus in common use in the laboratory.

(ii) *Hygiene.*

(a) *Water.*—Sources of supply (rain, surface, spring, river and well water) : structure of a well and of ordinary water system of a house : methods of purification (storage, filtration, boiling, chlorination) : methods of collecting samples for analysis from tap, pump or reservoir : particulars to be forwarded with water sample : mode of transmission of water sample to laboratory : analysis of water—physical characters ; reaction ; estimation of ammonia ; oxygen absorbed (Tidy) ; nitrates ; chlorides ; solids ; hardness ; poisonous metals (copper, lead, zinc and iron) : bacteriological examination for total number of organisms and presence of B. coli or pathogenic organisms : Horrocks's method of testing the chlorination of water : principles of water softening plants : principles and construction of swimming bath plants.

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(b) *Drainage.*—Meaning and brief description of privy system and water carriage system ; rain water ; waste water ; excreta ; trade effluents ; sewage ; sewage effluent ; flushing cisterns ; closets ; soil pipes ; drains ; traps ; ventilators ; sewers : simple construction of such sewage disposal plants as broad irrigation, chemical precipitation, biological : methods of collecting sewage effluent for analysis : particulars to be forwarded with and mode of transmission of sewage effluent to laboratory : analysis of sewage effluents—physical characters ; estimation of ammonia ; dissolved oxygen (Rideal-Stewart test) ; nitrates ; chlorides ; suspended solids ; total solids : bacteriological examination for total number of organisms and presence of B. coli.

(c) *Food—Milk, butter, flour, tea, meat and preserved foods.*—

Milk.—Composition and sources of infection : skimmed, separated, pasteurised, and condensed milks : methods of sterilisation of milk : methods of collecting milk samples for analysis : particulars to be forwarded with and method of transmission of milk samples : analysis of milk—physical characters ; specific gravity ; degree of acidity ; cream tube ; estimation of fat ; (Werner-Schmidt or Gerber's process) ; carbohydrate by Pavy's method ; total solids and ash : bacteriological examination for total number of organisms, B. coli, B. enteritidis sporogenes and B. tuberculosis.

Butter.—Specific gravity : elements of Reichert-Wollny test for estimation of volatile fatty acids.

Flour and bread.—Physical characters : parasites (mites, smuts and fungi) : preparation of microscopic specimens for recognition of starches ; elements of estimation of proteid by Kjeldahl method, and fat by Soxhlet method.

Tea.—Mounting of leaves for examination : separating out of thein crystals.

Meat.—Characters of fresh and frozen meat : short history and characters of common parasites—tænia solium and saginata ; actinomycosis.

Sausages.—Simple tests for putrefaction, e.g., evolution of ammonia.

Fish.—Simple tests for the recognition of fresh from decomposing fish.

Eggs.—Simple tests for the recognition of fresh from bad eggs.

Preserved, canned and bottled food.—Recognition of bad tins : preparation of contents of tin for examination in laboratory : examination of food for arsenic, or such preservatives as sulphites, salicylates, formalin, copper.

(d) *Ventilation.*—Principles of—natural and artificial : estimation of air space : methods of collecting samples of air for analysis : estimation of CO_2 in air by Pettenkofer's or Lunge-Zeckendorf's method : recognition of carbon-monoxide gas : regulations regarding aeroplane dope.

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(e) *Disinfectants.*—Infection and its mode of spread : difference between disinfectant, antiseptic and deodorant : elements of the determination of the germicidal power of a disinfectant by Rideal-Walker method : simple methods for testing the efficiency of steam disinfectors : commoner disinfectants in use and their strength : disinfection of rooms and clothing.

(f) *Insects and vermin.*—Commoner characteristics and points in life history of the house fly, culex and anopheles mosquitoes, sandflies, fleas, lice, bed bugs : methods of collection of insects, their eggs and larvæ : transmission of specimens to the laboratory : how to deal with vermin, with special reference to rats and plague : structure, use and care of water collecting outfits, Wanklyn's apparatus, Nessler glasses, Winchester quart bottles, known capacity bottles, Muencktall's filter paper, Gerber's tube, Stokes' tube, Soxhlet fat extractor, Soxhlet thimbles, Reichert-Wollny apparatus, aspirating jar, colorimeter and Rideal-Walker carbolic coefficient outfit.

(iii) *Pathology.*

General laboratory regulations.—Sterility : method.

Packing and unpacking of all stores : special reference to B. subtilis : regulation regarding transmission of pathological specimens by post.

Cleaning.—Routine cleaning of floors, benches and hands : cleaning of new glassware : routine cleaning of used test tubes, pipettes, beakers, flasks, sputum pots, throat swabs, and fæces pots.

Drying, plugging and preserving of glassware.

Methods of sterilisation.—By chemicals, dry and moist heat as applied to glassware, indiarubber goods, metallic instruments, solutions, media, and micro-organisms.

Media.—Composition, preparation, standardisation, filtration and common use of the following :—Normal saline : peptone water : nutrient broth ; nutrient agar : nutrient gelatine ; blood agar : serum agar : Dorset egg : MacConkey (solid and fluid) : commoner sugar media : litmus milk.

Stains.—Composition, preparation and the methods of using the following :—Methylene blue : gentian violet : basic fuschine : eosin : neutral red : bacterial stains—gram ; Ziehl-Neelson ; Neisser : blood stains—Leishmann ; Jenner : tissue stains—hæmatin and eosin : Van Giesen.

Storing and labelling of sterile apparatus and media, and of laboratory stores and equipment generally.

Laboratory reports, forms and stock-taking.—Day book : Forms 3212, 1230, 1209, 600, 673, 674, 675, 29.

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Urine analysis.—Physical characters: reaction: albumen: blood: pus: sugar: bile: phosphates: urea: chlorides: deposit for cells, casts, crystals, ova, and bacteria.

Technique of preparation of cultures (aerobic and anaerobic), smears of organisms, tissues for section cutting and preservation of tissues for museum purposes.

Routine examination of bloods, fæces, gastric contents, genital smears, pus and pathological fluids, sputa and throat swabs: this training to comprise the preparation and laying out of all material and appliances required, and a working knowledge of how each test is carried out.

Blood for count of red and white corpuscles, hæmoglobin estimation: differential leucocyte count and malarial parasites: serum for agglutination test against typhoid group, and for Wassermann or Sigma test: technique of vein puncture.

Fæces for pathogenic bacteria, protozoa and helminths: occult blood and foreign bodies.

Gastric contents.—Preparation of meals: apparatus for withdrawal: one hour and fractional test methods: analysis of contents—physical characters; total acidity; free hydrochloric acid; organic acids; pepsin; bile; blood.

Genital smears.—Résumé of local anatomy: cleansing of parts and collection of material: smears and cultures for gonococcus: preparations of specimens for dark ground illumination (spironemata).

Pus and pathological fluids.—Chief materials dealt with—pus from boils; cerebro-spinal and pleural fluids: methods of collection and preparation of apparatus for common physical, chemical and bacteriological tests.

Sputa.—Collection and disposal: methods of examination for tubercle bacillus and other organisms: antiformin method: wet specimens for entamoeba histolytica.

Throat swabs.—Ordinary and West's swabs: collection and disposal of material: method of examination for causal organisms of diphtheria: Vincent's infection and cerebro-spinal meningitis.

Vaccines.—Apparatus for the preparation of autogenous vaccines: preparation of patient and apparatus for vaccine or serum inoculation.

Post-mortems.—Preparations for, and precautions during examination: structure, use and care of such apparatus as the microscope and its lenses; outfits for collection of faeces, sputa, throat swabs, urine, and Wassermann tests; bacteriological pipettes, Erlenmeyer flasks, Durham's tubes, Petri capsules,

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MacLeod anaerobe capsules, urinometer, Esbach's albumenometer, ureometers, saccharometers, hæmocytometers, hæmoglobinometers, Garrow's agglutinometer, Dreyer's dropping pipettes, Dreyer's agglutinating tubes, opsonic pipettes, Wassermann tubes, Wassermann bath, centrifuge, incubators, vaccine bath, vaccine ampoules, scissors, Cornet's forceps, paraffin embedding bath, microtome, hot air steriliser, Koch's steam steriliser, autoclave, ice-chest, rubber tubing and gloves, and serum inspissator.

Animals.—A knowledge of the care, feeding and isolation of animals under experiment: preparation of animals for post-mortem examination.

138. The syllabus of lectures for laboratory assistants is as follows :—

SYLLABUS OF LECTURES FOR LABORATORY ASSISTANTS IN THE ROYAL AIR FORCE.

Week.	Lecture.	Practical Work.
(1.)	General laboratory regulations: packing and unpacking of stores: cleaning of floors, benches, glassware.	Cleaning glassware: plugging of tubes, flasks, etc.
(2.)	Methods of sterilisation ..	Sterilisation of glass, rubber, scalpels, needles, fluids.
(3.)	Weights and measures: specific gravity: solids, liquids and gases.	The balance: hydrometry: weighing of a precipitate.
(4.)	Temperature and pressure: thermometers: conduction, and radiation of heat: evaporation.	Thermometers: Bunsen burner: preparation of pure distilled water—tests for purity.
(5.)	Lenses: spectroscope: elements of electricity.	Pole finding: use and care of centrifuge and other electrical instruments.
(6.)	Chemical definitions and elementary facts.	Estimation of solids in water and in milk.
(7.)	Preparation of solutions: care of chemical reagents.	Preparation of solutions: normal and standard solutions.
(8.)	Demonstration of instruments used in the study of elementary physics and chemistry.	Simple glass blowing: construction of apparatus.
(9.)	Media in common use.. ..	Preparation of media.
(10.)	Stains	Preparation of stains and method of staining.
(11.)	Urine analysis	Urine analysis.
(12.)	Laboratory reports, forms, books and stocktaking.	Clerical duties.
(13.)	Break for leave.	———
(14.)		

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Week.	Lecture.	Practical Work.
(15.)	Preparation of smears, cultures, and tissues for examination.	Preparing and examining of cultures : paraffin embedding : section cutting.
(16.)	Analysis of fæces : (bacteriological and chemical).	Preparing fæces for examination : recognition of commoner ingredients of fæces—normal and pathological.
(17.)	Water supplies : purification of water : collection of water samples : transmission of samples.	Preparing and despatching apparatus for collection : collecting samples : visit to reservoir and swimming baths.
(18.)	Analysis of water : chlorides : nitrates : hardness : solids : poisonous metals.	Preparation of apparatus and reagents for an estimation of chlorides, nitrates, hardness and solids in water.
(19.)	Analysis of water : ammonia : oxygen absorbed : bacteriological examination.	Preparation of apparatus for and estimation of ammonia, oxygen absorbed, and organismal content of waters.
(20.)	Blood examination : total counts of corpuscles : differential counts : malarial parasites : coagulation time.	Performance of blood tests lectured on.
(21.)	Blood examination : vein puncture : agglutination tests : culture : Wassermann test : blood urea : blood sugar.	Preparation of apparatus and patient for vein puncture : assisting with agglutinations, Wassermann tests, blood urea and blood sugar estimations.
(22.)	Gastric analysis : meal : apparatus used : commoner tests employed.	Preparation of apparatus and meal for gastric tests : estimation of total acidity, free hydrochloric acid and lactic acid : test for pepsin.
(23.)	Brief description of drainage system : collection of sewage effluents.	Preparation of apparatus and reagents required for sewage analysis : visit to sewage works and collection of sample.
(24.)	Analysis of sewage effluent : physical characters : ammonia : chlorides : Rideal-Stewart test : suspended solids : bacteriological examination.	Preparation of apparatus and assisting at the tests lectured on.
(25.)	Stocktaking and revision.	———
(26.) (27.)	Break for leave.	———
(28.)	Venereal diseases : collection of material : intravenous treatment : preventive measures.	Preparation of V.D. case and apparatus : collection of material : assisting with treatment : assisting with dark-ground work.
(29.)	Collection of pus, cerebro-spinal and pleuritic fluids : brief anatomy of parts : analysis of fluids.	Preparation of pus smears and cultures : preparation of apparatus for lumbar puncture : assisting with tests.

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Week.	Lecture.	Practical Work.
(30.)	Milk—composition, sterilisation, collection and transmission: analysis of for cream and fat.	Collection of milk sample: estimation of cream and fat: visit to dairy.
(31.)	Milk analysis for sugar, solids, ash and organisms.	Preparation of apparatus and estimation of sugar, solids, ash and organisms.
(32.)	Butter for specific gravity and Reichert-Wollny figure: tea—chief impurities.	Erection of Reichert-Wollny apparatus: assist at tests on butter and tea.
(33.)	Sputa: collection and disposal: examination of.	Routine examination of sputa: antiformin method: inoculation of guinea-pig.
(34.)	Throat swabs: collection and examination of.	Preparation of throat swab outfits: routine examination of throat swabs.
(35.)	Flour and bread: common characters of and parasites found in: estimation of proteid and fat.	Assisting with construction of apparatus (Kjeldahl and Soxhlet tests).
(36.)	Meat — sausage — fish — eggs: simple tests for freshness.	Simple tests: recognition of tapeworms: visit to slaughter house.
(37.)	Preserved, canned and bottled foods: tests for blowing: preservatives in food.	Examination of tins: tests for preservatives.
(38.)	Stocktaking and revision.	———
(39.) (40.)	Break for leave.	———
(41.)	Vaccines and sera: preparation, storage and uses.	Assisting with preparation of vaccines: preparation of patient and apparatus for vaccine and serum inoculation.
(42.)	Post mortem examination: preparations for and precautions during performance of examination.	Preparation of post mortem room: further exercise in cutting sections.
(43.)	Demonstration of laboratory apparatus.	Construction, maintenance and repair of apparatus.
(44.)	Principles of ventilation: collection of samples of air for analysis: estimation of CO_2.	Collection of samples of air: estimation of CO_2: visit to dope shop.
(45.)	Disinfectants—their mode of action and use: Rideal-Walker test.	Simple disinfectant tests: assisting with Rideal-Walker test.
(46.)	Characteristics and life history of house fly, mosquitoes and sandflies.	Collection of insects: dissection of insects.
(47.)	Characteristics and life history of lice, fleas, and bed bugs: preventive measures.	Methods of preserving insects alive and dead.
(48.)	Care and feeding of animals under experiment: post mortem on animals: plague rats.	Feeding and cleaning of animals: preparation of animals for post mortem examination and inoculation.
(49.) (50.)	General revision.	———
(51.) (52.)	Break for leave.	———

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Princess Mary's Royal Air Force Nursing Service.

139. The average strength of the Princess Mary's Royal Air Force Nursing Service during 1927 was 105, compared with 119 in 1926. Fourteen candidates were interviewed, of whom ten were selected and four rejected—one as medically unfit and three as unsuitable. No new candidates were appointed during 1927 and eleven serving members left the service—eight voluntary resignations, two invalids and one contract not renewed.

140. The general health of the service was good and showed a marked improvement, especially among members serving abroad. There were 33 admissions to hospital, 14 at home and 19 abroad, representing 1,000 days' sickness or an average duration of each case of 30·3 days, compared with 27·1 days in 1926 and 20·5 in 1925. The average number of days' sickness per member was 9·6, compared with 10 in 1926, and the number of daily sick was 2·7 compared with 3·3 in 1926. Eighty-four days' sick leave was granted to members serving at home and 182 days to members serving abroad. The chief cause of sickness at home was upper air passage infections, and abroad dysentery and malaria. The two invalids referred to above were invalided for pulmonary tuberculosis and rheumatoid arthritis respectively. Three members were operated on for appendicitis and one for appendicitis and oophoritis. There were no deaths in the service.

Transfer of Casualties by Air.

141. The advantages and, in some commands, the necessity of evacuating casualties by air have been referred to in earlier reports. In all commands this method of transporting patients is employed whenever indicated, but in Iraq and Palestine the distances and nature of the country make it practically the only means of evacuating serious cases.

142. In Iraq during 1927, fifty-six patients were transferred to hospital by air compared with 130 in 1926. The drop in numbers is held to be accounted for largely by the decrease in the garrison —2,739 in 1927, compared with 3,536 in 1926. Thirty-two of the patients were conveyed in aircraft specially detailed for the purpose and 24 in aircraft carrying out duty trips for purposes other than medical. A total of 7,322 miles was flown on a total of 44 evacuation flights.

143. In Palestine during the same period, 69 patients were transferred from the R.A.F. station, Amman, to Ramleh—a distance of 60 miles over country impracticable to road transport. Three patients necessitated three special trips, and the remaining 66 were conveyed on 47 routine communication flights.

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Royal Air Force Reserve of Officers.

144. One hundred and thirty candidates for the Reserve of Officers were examined by the Central Medical Board during 1927 compared with 301 in 1926. Seventy-two candidates were accepted as medically fit and 58 were rejected, 11 temporarily and 47 finally—a percentage acceptance of 56 in 1927 compared with 80 in 1926.

145. The health of the reserve during its annual training was good and the general standard of fitness as shown by the results of physical efficiency and visual tests at their annual medical examination among these officers compared very favourably with the standard obtaining in the regular force.

146. Five hundred and twenty-five officers underwent training during 1927. During this period 18 cases of sickness not due to flying accidents and representing 93 days' non-effectiveness, were recorded. Twenty-one flying accidents occurred resulting in two deaths and nine admissions to hospital ; in the remaining ten, the occupants sustained no injuries.

147. On the occasion of the annual medical examination the standard of medical fitness of all officers was estimated by the 40 mm. Hg. test, and comparing the results with the war-time standard of the Regular Air Force, it was found that 93 per cent. were above the average, 4 per cent. were average, and 3 per cent. below the average. The visual efficiency of the same officers was tested by convergence and ocular muscle balance, and the results showed that 76 per cent. were very good, 8 per cent. good, 9 per cent. fair, and 7 per cent. poor. Comparing the results of both of these tests in 1927 with those in 1926, a very considerable improvement in the both standards is noticeable and is held to be largely due to the fact that by the end of 1926 most of the war-time pilots who formed the nucleus of the original reserve had completed their service and the force now consists for the most part of younger pilots who have passed to the reserve on the expiry of their short service commissions, or have been trained *ab initio* in the reserve.

Dental Treatment.

148. A summary of the dental work carried out by R.A.F. dental surgeons during 1927 is given in table XXVIII, page 84. R.A.F. personnel serving in Malta and India continued to receive dental treatment from the Army Dental Corps.

149. There was a decrease in the number of extractions and an increase in the conservative work done during the year, compared with 1926. Fewer personnel were supplied with dentures than during the previous year and fewer dentures were repaired or remodelled. The number of personnel supplied with dentures from civilian sources during 1927 was six.

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Other Cases treated in certain R.A.F. Hospitals and Sick Quarters.

150. Table XXIX, page 84, shows by class of patient, the average number of constantly sick, deaths, and number of cases, in respect of personnel other than of the Royal Air Force, who were admitted to R.A.F. hospitals and sick quarters during the year in certain commands where the Royal Air Force is responsible for the medical attendance on all service personnel.

Surgical Operations.

151. Table XXX, page 85, gives the number of surgical operations carried out on R.A.F. personnel during 1927.

TABLE XIX.—RESULTS OF 588 EXAMINATIONS BY THE CENTRAL MEDICAL BOARD ON CANDIDATES FOR FLYING DUTIES.

Class of candidate.	Number accepted	Number rejected.		Total.	Percentage accepted.
		Finally	Temporarily.		
Cadets	68	23	4	95	72
Airman pilots	57	38	5	100	57
Short service commissions	159	165	37	361	44
Fleet Air Arm	27	5	—	32	84
Total	311	231	46	588	53

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TABLE XX.—CANDIDATES FOR FLYING DUTIES.

Average physical efficiency tests and measurements recorded by the Central Medical Board.

——	Unit of measurement.	Class of candidate.				
		Cadets.	Short Service Commission officers.	Airman pilots.	Fleet Air Arm officers.	All classes.
Number accepted ..	—	68	158	57	28	311
Average age	Years.	18·4	21·4	22·0	23·7	21·1
Average results of tests.						
Standing height ..	Cms.	175·8	175·8	171·2	177·8	175·1
Weight ..	Kgms.	62·9	65·0	63·2	67·6	64·4
Chest ..	Cms.	85·8	87·0	86·0	86·6	86·5
Vital capacity	Cu. cms.	4,984	5,002	4,753	5,145	4,965
Breath-holding ..	seconds	79·8	73·1	80·1	78·6	76·3
Expiratory force ..	mm.hg.	134·5	134·0	152·5	131·3	137·3
Fatigue test	seconds	63·0	62·3	65·4	66·3	63·4
Systolic pressure ..	mm.hg.	128·2	129·7	129·3	130·4	129·4
Diastolic pressure ..	mm.hg.	79·4	79·2	78·1	79·2	79·1
Pulse rate :—						
Sitting ..	per min.	71·7	72·3	70·6	68·8	71·5
Standing..	per min.	77·1	78·1	75·2	74·6	77·0
After exercise ..	per min.	103·7	103·9	102·3	93·9	102·7
Time taken to return to normal ..	seconds	28·2	32·2	28·9	27·5	30·3

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TABLE XXI.—CAUSES OF REJECTION BY THE CENTRAL MEDICAL BOARD.

Class of candidate.	(1) Vision.		(2) Ear, nose, throat and teeth.		(3) Medical and and surgical.		(4) Defective physical efficiency.		(5) Combinations of (1), (2), (3), with (4).		Total.	
	Temporarily.	Finally.	Temporarily.	Finally.	Temporarily.	Finally.	Temporarily.	Finally.	Temporarily.	Finally.	Temporarily.	Finally.
Permanent commissions	1	6	—	1	10	19	1	4	2	12	14	42
Short service commissions ..	4	58	—	5	11	9	16	47	8	46	39	165
Cadets	2	8	—	—	1	5	—	2	1	8	4	23
R.A.F. Reserve ..	3	15	1	2	3	5	1	10	3	15	11	47
Airman pilots ..	—	18	—	2	4	3	1	6	—	9	5	38
Auxiliary Air Force	—	1	—	—	—	1	—	—	—	3	—	5
Fleet Air Arm ..	—	—	—	1	—	2	—	1	—	1	—	5
Casuals	1	4	—	1	—	—	—	1	—	4	1	10
Secondments to R.A.F.	—	—	—	—	—	—	1	—	—	—	1	—
Total ..	11	110	1	12	29	44	20	71	14	98	75	335

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TABLE XXII.—PHYSICAL ASSESSMENT IN RESPECT OF AIR DUTIES OF 2,071 OFFICERS OF THE GENERAL DUTIES BRANCH.

——	Year.	Fit, full flying.	Unfit, full flying.	Total.	Percentage fit, full flying.
At home	1927	1,308	188	1,496	87
	1926	1,375	191	1,566	88
	1925	1,401	154	1,555	90
	1924	1,384	168	1,552	89
	1923	1,330	196	1,526	87
	1922	1,181	173	1,354	87
Abroad	1927	519	56	575	90
	1926	593	57	650	91
	1925	665	52	717	93
	1924	672	60	732	92
	1923	616	85	701	88
	1922	638	104	742	86
Total	1927	1,827	244	2,071	88
	1926	1,968	248	2,216	89
	1925	2,066	206	2,272	91
	1924	2,056	228	2,284	90
	1923	1,946	281	2,227	87
	1922	1,819	277	2,096	87

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TABLE XXIII.—RESULTS OF FURTHER TESTS OF OFFICERS OF THE GENERAL DUTIES BRANCH AND AIRMAN PILOTS.

Nature of test.	Officers.						Airman pilots, 239.		Total officers and airman pilots, 2,310.	
	Fit for flying duties, 1,827.		Unfit for flying duties, 244.		Total, 2,071.					
	Numbers.	Percentage.	Numbers.	Percentage.	Numbers.	Percentage.	Numbers.	Percentage.	Numbers.	Percentage.
Tremor—absent	880	48	89	36	969	47	98	41	1,067	46
,, present	947	52	155	64	1,102	53	141	59	1,243	54
Self-balancing, steady	1,711	94	204	84	1,915	92	229	96	2,144	93
,, ,, unsteady	116	6	40	16	156	8	10	4	166	7
Knee jerks—normal	1,578	86	197	81	1,775	86	201	84	1,976	86
,, ,, abnormal	249	14	47	19	296	14	38	16	334	14
Vision, 6/6 both eyes	1,746	96	190	78	1,936	94	233	98	2,169	94
,, 6/6 and 6/9; 6/9 and 6/9	57	3	28	11	85	4	5	2	90	4
,, over 6/9 in either eye	24	1	26	11	50	2	1	0	51	2
Nasopharynx—normal	1,789	98	237	97	2,026	98	237	99	2,263	98
,, abnormal	38	2	7	3	45	2	2	1	47	2
Teeth—no treatment required	1,414	77	184	75	1,598	77	168	70	1,766	76
,, treatment required	413	23	60	25	473	23	71	30	544	24
Pyorrhœa—absent	1,806	99	238	98	2,044	99	239	100	2,283	99
,, present	21	1	6	2	27	1	—	—	27	1

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TABLE XXIV.—AVERAGE RESULTS OF TESTS OF 1,827 SERVING OFFICERS OF THE GENERAL DUTIES BRANCH AND 229 AIRMAN PILOTS FIT FOR FLYING DUTIES.

—	Age group.	No. examined.	Age.	Weight.	Time breath held.	Expiratory force.	Fatigue test.	Pulse rate per minute.			Time taken to return to normal.	Systolic pressure.	Pulse pressure.
								Sitting.	Standing.	After-exercise.			
OFFICERS.	Yrs.		Yrs.	Kgs.	Secs.	Mm. Hg.	Secs.				Secs.	Mm. Hg.	Mm. Hg.
At home	Under 25 ..	433	22·2	68·7	78·6	152·3	61·8	71·9	77·9	100·7	22·4	122·8	45·9
	25–30 ..	466	28·1	69·5	77·0	158·6	63·3	73·1	79·2	101·7	23·7	124·0	45·2
	31 and over	409	34·3	71·4	74·3	161·7	61·6	73·0	79·2	101·3	23·8	125·4	44·9
	All ages ..	1,308	28·1	69·8	76·7	157·5	62·3	72·7	78·8	101·2	23·3	124·1	45·4
Abroad	Under 25 ..	134	23·3	67·0	80·5	153·7	63·6	73·7	82·5	101·5	22·2	123·4	45·3
	25–30 ..	241	27·9	68·4	78·7	156·4	65·5	74·0	82·4	100·8	21·5	123·9	44·7
	31 and over	144	34·5	68·2	74·2	153·5	60·0	73·2	82·2	100·3	21·1	123·6	42·5
	All ages ..	519	28·5	68·0	77·9	154·9	63·5	73·7	82·4	100·8	21·6	123·7	44·3
Total force ..	Under 25 ..	567	22·5	68·3	79·0	152·6	62·3	72·3	79·0	100·9	22·4	123·0	45·8
	25–30 ..	707	28·0	69·1	77·6	157·8	64·1	73·4	80·3	101·4	23·0	124·0	45·0
	31 and over	553	34·3	70·6	74·3	159·6	61·2	73·1	80·0	101·0	23·1	125·0	44·3
	All ages ..	1,827	28·2	69·3	77·0	156·8	62·6	73·0	79·8	101·1	22·8	124·0	45·1

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AIRMAN PILOTS.													
At home	Under 25 ..	55	23·3	65·2	77·6	147·7	59·5	74·0	79·9	105·8	22·8	126·7	48·8
	25–30 ..	109	26·9	66·4	73·3	151·3	65·8	73·7	78·7	102·9	23·0	128·1	46·6
	31 and over	6	32·5	67·6	70·0	147·5	56·5	72·0	74·0	98·0	23·3	136·0	48·5
	All ages ..	170	25·9	66·0	74·6	150·0	63·4	73·8	78·9	103·7	23·0	128·0	47·4
Abroad	Under 25 ..	29	23·4	64·8	84·5	152·6	63·2	73·9	81·3	103·1	20·7	122·8	44·4
	25–30 ..	27	26·7	68·7	79·5	156·8	64·8	72·7	79·9	100·2	21·1	127·0	48·1
	31 and over	3	32·2	64·0	76·3	141·7	64·3	68·0	76·0	98·0	18·3	131·3	52·6
	All ages ..	59	25·4	66·5	81·8	153·9	64·0	73·0	80·4	101·5	20·8	125·2	46·6
Total force ..	Under 25 ..	84	23·4	65·0	80·0	149·4	60·8	74·0	80·4	104·9	22·1	125·4	47·3
	25–30 ..	136	26·9	66·8	74·5	152·4	65·6	73·5	78·9	102·4	22·6	127·9	46·9
	31 and over	9	32·4	66·4	72·1	145·6	59·1	70·7	74·7	98·0	21·7	134·4	49·8
	All ages ..	229	25·8	66·2	76·4	151·0	63·6	73·6	79·3	103·1	22·4	127·2	47·1

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TABLE XXV.—REASONS OF UNFITNESS (TEMPORARY OR OTHERWISE) FOR FULL FLYING DUTIES OF 244 OFFICERS OF THE GENERAL DUTIES BRANCH.

Defect.	At home.	Abroad.	Total.
Vision	41	17	58
Ears or teeth	14	4	18
Medical	57	15	72
Surgical	60	9	69
D.P.E.	13	10	23
D.P.E. and vision	1	—	1
D.P.E. and medical	1	—	1
D.P.E. and surgical	—	1	1
D.P.E. and ears or teeth	1	—	1
	188	56	244

TABLE XXVI.—RECRUITS—CAUSES OF REJECTION.

(1)	Loss or decay of many teeth	406
(2)	Deformities of feet	248
(3)	Poor physique	242
(4)	Defects of vision	193
(5)	Diseases of ears	182
(6)	Diseases of heart	157
(7)	Diseases of lungs	149
(8)	Diseases of the nervous system	78
(9)	Diseases of veins (varix)	61
(10)	Affections of the cutaneous system	52
(11)	Diseases of eyes and eyelids	48
(12)	Defects of extremities	36
(13)	Hernia and bubonocele	33
(14)	Malformation of urinary organs	31
(15)	Albuminuria	26
(16)	Ulcers, wounds and cicatrices	26
(17)	Other general diseases	23
(18)	Pyorrhœa	20
(19)	Other affections of bones and muscles	19
(20)	History of bed-wetting	18
(21)	Other causes	148
		2,196

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TABLE XXVII.—SUMMARY OF LABORATORY WORK CARRIED OUT IN THE ROYAL AIR FORCE.

Nature of Examinations.	United Kingdom.			Abroad.			Total.
	Central.	Cranwell.	Halton.	Hinaidi.	Basrah.	Palestine.	
Analyses—							
Fæces	30	19	2	2	—	—	53
Gastric	26	3	26	2	—	—	57
Urine	692	651	3,111	449	200	466	5,569
Food	64	1	—	6	3	24	98
Sewage	78	—	—	—	—	—	78
Water	193	—	—	—	—	93	286
Blood—							
Agglutinations	142	4	94	219	12	6	477
Coagulation time	9	—	100	—	—	—	109
Counts	235	9	294	168	41	45	792
Cultures	100	3	13	221	12	12	361
Malaria parasites	253	12	266	976	1,048	418	2,973
Sugar	72	—	—	—	—	—	72
Urea	95	—	25	—	—	—	120
Van den Bergh	11	—	1	—	—	—	12
Wassermann	283	—	361	295	41	—	980
Cerebro-spinal fluid—							
Bio-chemical	8	—	—	1	1	—	10
Cell counts	8	—	1	1	1	—	11
Complement deviation	5	—	—	—	—	—	5
Cultures	10	1	8	—	1	—	20
Meningococcus	10	—	—	—	1	—	11
Tubercle bacillus	8	—	—	—	—	—	8
Faces—							
Bacteria	486	8	164	618	150	27	1,453
Protozoa	595	1	695	983	168	767	3,209
Helminths	195	1	217	175	29	18	635
Pathological specimens	25	—	—	1	—	—	26
Peri-dental smears	31	—	—	1	—	—	32
Pus, exudates and transudates—							
Bio-chemical	20	—	—	—	—	—	20
Cytological	19	—	—	14	—	—	33
Bacillus Ducrey	11	—	—	9	1	6	27
Gonococcus	47	195	795	371	116	173	1,697
Spironema	20	4	12	22	19	6	83
Pyogenic organisms	123	18	13	35	8	—	197
Leishmania	8	1	2	8	9	2	30
Renal efficiency tests	103	—	29	4	—	2	138
Sputa—							
General	121	—	48	111	1	30	311
Tubercle	156	86	403	182	59	81	967
Throat swabs	2,332	91	466	105	23	22	3,039
Vaccines–autogenous	160	—	7	19	3	3	192
Miscellaneous	102	58	107	46	44	89	446
Total	6,886	1,166	7,260	5,044	1,991	2,290	24,637

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TABLE XXVIII.—DENTAL TREATMENT CARRIED OUT BY R.A.F. DENTAL SURGEONS.

Nature of treatment.	United Kingdom (average strength, 21,526).	Mediterranean Littoral (average strength, 3,296).	Iraq (average strength, 2,739).	Total (average strength, excluding India, 28,147).
Fillings	25,125	1,872	1,374	28,371
Scalings	4,360	815	484	5,659
Extractions	11,443	1,067	655	13,165
Root fillings	770	110	11	891
Number of dentures supplied	324	90	37	451
Number of personnel supplied with dentures ..	232	68	33	333
Number of repairs to dentures	35	30	56	121
Remodels..	81	38	42	161

TABLE XXIX.—PERSONNEL, OTHER THAN OF THE ROYAL AIR FORCE, TREATED IN CERTAIN R.A.F. HOSPITALS AND STATION SICK QUARTERS.

——	No. of admissions.	Deaths.	Average No. constantly sick.
IRAQ.			
British Army troops	121	—	6·4
Indian troops	1,080	5	39·8
Indian followers	372	4	15·6
Royal Navy	12	1	1·1
All others	48	—	2·5
MIDDLE EAST.			
British Army troops	32	—	1·6
All others	39	—	1·9

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TABLE XXX.—SURGICAL OPERATIONS PERFORMED ON R.A.F. PERSONNEL.

Nature of operation.	Place of operation.			Total.
	R.A.F. sick quarters.	R.A.F. hospitals.	Royal Navy, Army and other hospitals.	
Amputations	—	11	6	17
Appendicectomy	—	159	75	234
Other abdominal operations	—	7	6	13
Avulsion of nails	17	58	11	86
Circumcision	—	44	19	63
Evacuation of abscesses and boils	60	130	35	225
For hæmorrhoids	—	31	13	44
For hydrocele	—	7	—	7
For varicocele	—	11	5	16
For varix	—	17	5	22
Herniotomy	—	42	27	69
On ear and mastoid ..	—	1	5	6
On eyes	—	5	3	8
On joints and bones ..	3	55	15	73
On nose	—	29	9	38
Reduction of fractures and dislocations	8	18	29	55
Removal of tonsils and adenoids	—	109	23	132
Removal of tumours, cysts, bursæ, etc.	7	40	15	62
Suture of wounds	9	33	23	65
Wiring or plating fractures	—	23	14	37
All other operations ..	1	30	18	49
Total ..	105	860	356	1,321

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TABLE XXXI.—RECRUITS—CORRELATION OF WEIGHT AND CHEST MEASUREMENTS.

Age.	Height in inches.	Weight in lbs.	Chest fully expanded in inches.	Range of expansion not less than inches.
18	62 and under 65 ..	112	33½	2
	65 ,, ,, 68 ..	115	34	2
	68 ,, ,, 72 ..	118	34½	2
19	62 ,, ,, 65 ..	114	34	2
	65 ,, ,, 68 ..	117	34½	2
	68 ,, ,, 70 ..	120	35	2
	70 ,, ,, 72 ..	124	35½	2
	72 and upwards ..	128	36	2½
20	62 and under 65 ..	115	34	2
	65 ,, ,, 68 ..	120	34½	2
	68 ,, ,, 70 ..	123	35	2
	70 ,, ,, 72 ..	126	35½	2
	72 and upwards ..	130	36	2½
21	62 and under 65 ..	118	34	2
	65 ,, ,, 68 ..	121	35	2
	68 ,, ,, 70 ..	124	35½	2
	70 ,, ,, 72 ..	127	36	2½
	72 and upwards ..	132	36½	2½
22 and over	62 and under 65 ..	120	34½	2
	65 ,, ,, 68 ..	123	35	2
	68 ,, ,, 70 ..	126	35½	2
	70 ,, ,, 72 ..	130	36	2½
	72 and upwards ..	133	36½	2½

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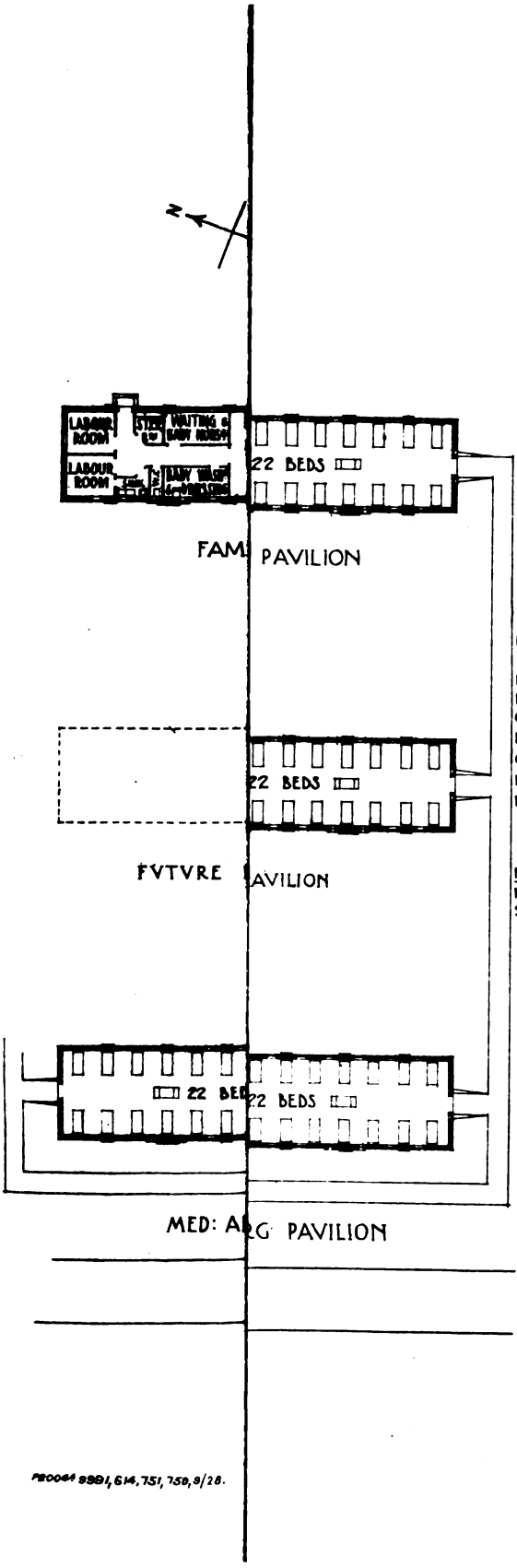

ACCOMMODATION

MED: AND SURG:	132 BEDS
SPECIAL CASE	6
RECEPTION	12
MENTAL	2
OPHTHALMIC	2
DETENTION	4
OFFICERS	20
NURSES	3
FAMILIES HOSPITAL	21
SPECIAL CASE	2
TOTAL	204

FUTURE EXTENSION

MED: AND SURG:	110
SPECIAL CASE	6
TOTAL WITH FAMILIES H. CONVERTED	116
FAMILIES H. ACCOM^{N} DEDUCTED	23
NET TOTAL OF EXTRA BEDS	93

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AIR MINISTRY.

REPORT

ON THE

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FOR THE YEAR

1928.

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REPORT

ON THE

HEALTH OF THE ROYAL AIR FORCE

FOR THE YEAR

1928.

The following Report on the Health of the Royal Air Force for the Year 1928 is issued for the information and guidance of all concerned.

By Command of the Air Council,

W. Nicholson

AIR MINISTRY,

Published September, 1929.

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AIR MINISTRY,
KINGSWAY,
LONDON, W.C.2.

To The Secretary of the Air Council.

SIR,

I have the honour to submit the accompanying report on the health of the Royal Air Force at home and abroad during 1928.

The general arrangement of the report and the information given in the tables follow that of previous reports of this series with the exception that, in accordance with the recommendations of the Joint Medical Services Sub-Committee on Tuberculosis, a more detailed analysis of the incidence of pulmonary tuberculosis in the Royal Air Force has been included in chapter I, and a short résumé of the transfer of casualties by air since the inception of this method of evacuation has been added to chapter IV.

The health of the force at home and abroad has been good, and compares favourably with that of previous years.

The high level of physical fitness among officers called upon to fly and airman pilots, which has been noted in previous years, was well maintained during 1928, 88 per cent. being found fit for full flying duties on the occasion of their annual medical examination.

I have the honour to be, Sir,
Your obedient Servant,

DAVID MUNRO,
Director of Medical Services,
Royal Air Force.

July, 1929.

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TABLE I.—SICKNESS AT HOME AND ABROAD—ANALYSED BY GEOGRAPHICAL AREAS.

Geographical Area.	Average strength.	Fresh cases of sickness.			Deaths.	Invalided out of service.	Invalided to United Kingdom.	Average duration of each case in days.		Average No. of days sickness per head.		Incidence per 1,000 of strength.					
												Fresh cases of sickness.				No. sick daily.	
		Less than 48 hours.	More than 48 hours.	Total.				48-hour cases included.	48-hour cases excluded.	48-hour cases included.	48-hour cases excluded.	48-hour cases included.	48-hour cases excluded.	Deaths.	Invalided out of service.	Invalided to United Kingdom.	48-hour cases included.	48-hour cases excluded.
United Kingdom—																	
1928§	21,981	3,636	7,862	11,498	83	155	—	15·2	21·5	7·9	7·7	523·1	357·7	3·8	7·1	—	21·6	21·0
Average 1925–27 (*a*) ..	*23,017*	*6,996*	*8,428*	*15,424*	*76*	*205*	—	*10·8*	*18·6*	*7·2*	*6·8*	*670·1*	*366·2*	*3·3*	*8·9*	—	*19·7*	*18·6*
Average 1921–24	*21,452*	*10,272*	*8,122*	*18,394*	*69*	*292**	—	*8·8*	*18·1*	*7·5*	*6·8*	*857·5*	*378·6*	*3·2*	*13·6**	—	*20·5*	*18·6*
Fleet Air Arm Home and Abroad—																	
1928..	812	626	330	956	8	2	4	6·3	15·7	7·4	6·4	1177·3	406·4	9·9	2·5	9·2†	20·2	17·5
1927..	*711*	*327*	*256*	*583*	*8*	*2*	*5*	*7·6*	*15·4*	*6·3*	*5·5*	*820·0*	*360·1*	*11·3*	*2·8*	*11·4†*	*17·2*	*15·0*
Mediterranean Littoral—																	
1928§	3,284	1,803	1,891	3,694	19	13	36	8·5	15·3	9·6	8·8	1124·8	575·8	5·8	4·0	11·0	26·2	24·0
Average 1925–27 (*a*) ..	*3,485*	*1,921*	*1,906*	*3,827*	*21*	*18*	*69*	*10·3*	*19·2*	*11·3*	*10·5*	*1098·1*	*546·9*	*6·0*	*5·2*	*19·8*	*30·9*	*28·7*
Average 1921–24	*3,669*	*2,458*	*2,216*	*4,674*	*19*	*22*	*59*	*9·7*	*18·9*	*12·4*	*11·4*	*1274·0*	*604·0*	*5·0*	*6·1*	*15·4*	*33·9*	*31·2*
Iraq—																	
1928..	2,412	1,049	1,787	2,836	19	10	65	13·2	19·9	15·5	14·7	1175·8	740·9	7·9	4·1	26·9	42·3	40·2
Average 1925–27	*3,291*	*2,035*	*2,683*	*4,718*	*22*	*17*	*84*	*11·4*	*19·0*	*16·4*	*15·5*	*1433·6*	*815·3*	*6·7*	*5·2*	*25·5*	*44·3*	*42·3*
Average, 1921–24	*2,712*	*3,193*	*2,726*	*5,919*	*25*	*17*	*80*	*8·9*	*17·8*	*19·5*	*17·9*	*2182·4*	*1005·1*	*9·2*	*6·2*	*29·5*	*53·4*	*49·0*
India—																	
1928..	1,915	1,154	1,153	2,307	7	8	30	8·8	16·1	10·5	9·7	1204·7	602·1	3·7	4·2	15·7	28·7	26·5
Average 1925–27	*1,966*	*1,215*	*1,422*	*2,637*	*17*	*10*	*52*	*8·1*	*13·9*	*10·9*	*10·1*	*1341·3*	*723·3*	*8·6*	*5·1*	*26·4*	*29·8*	*27·6*
Average, 1921–24	*1,827*	*2,851*	*1,366*	*4,217*	*16*	*12*	*44*	*6·6*	*17·3*	*15·2*	*12·9*	*2308·0*	*747·4*	*9·0*	*6·7*	*24·2*	*41·6*	*35·3*
Total, Abroad—																	
‡1928..	7,677	4,006	4,913	8,919	46	32	134	10·2	17·2	11·8	11·0	1161·8	640·0	6·0	4·2	17·5	32·2	30·1
øAverage 1925–27 (*a*) ..	*8,792*	*5,205*	*6,046*	*11,251*	*60*	*45*	*205*	*10·3*	*17·8*	*13·1*	*12·3*	*1279·7*	*687·7*	*6·8*	*5·1*	*23·4*	*35·8*	*33·6*
Average, 1921–24	*8,208*	*8,502*	*6,308*	*14,810*	*60*	*51*	*183*	*8·5*	*18·1*	*15·4*	*13·9*	*1804·5*	*768·6*	*7·3*	*6·2*	*22·4*	*42·2*	*38·1*
Total Force—																	
1928..	30,470	8,268	13,105	21,373	137	189	138	12·7	19·7	8·9	8·5	701·4	430·1	4·5	6·2	17·0†	24·3	23·2
Average 1925–27	*32,045*	*12,310*	*14,559*	*26,869*	*139*	*251*	*208*	*10·6*	*18·3*	*8·9*	*8·3*	*838·5*	*454·3*	*4·3*	*7·8*	*23·3†*	*24·3*	*22·7*
Average, 1921–24	*29,660*	*18,774*	*14,430*	*33,204*	*129*	*343**	*183*	*8·6*	*18·1*	*9·7*	*8·8*	*1119·4*	*486·5*	*4·4*	*11·6**	*22·4†*	*26·6*	*24·1*

* Excludes 711 invalids through Discharge Centre Medical Board during 1921. † Calculated on strength abroad. ‡ Includes sickness at Far East stations: 82 cases, 1 death, 1 finally invalided and 3 invalided to the United Kingdom. § Excludes Fleet Air Arm. (*a*) Excludes Fleet Air Arm for 1927. ø Includes sickness at China stations in 1927.

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CHAPTER I.—THE HEALTH OF THE ROYAL AIR FORCE AS A WHOLE DURING 1928.

General.

1. The total sickness in the force as a whole during 1928 is analysed in table I, page viii, and for the purpose of comparison, the corresponding average figures for the two periods 1925–7 and 1921–4 are included. These two periods are referred to throughout as the two previous periods. In this analysis the term Mediterranean Littoral comprises Malta (average strength 342), Egypt and Palestine (2,569), Aden (212), and drafts *en route* to and from the United Kingdom (161). Details of the sickness at stations in the Far East are given in a footnote to table I, and, as in 1927, separate figures are shown for the Fleet Air Arm.

2. The average strength of the total force during 1928 was 30,470, and the total number of cases of sickness, *i.e.*, both admissions to hospital or sick quarters and cases of less than 48 hours duration, was 21,373, giving a case incidence of 701·4 per 1,000 of strength compared with averages of 838·5 and 1119·4 respectively for the two previous periods.

3. The number of admissions to hospital or sick quarters was 13,105, representing an incidence of 430·1 per 1,000 compared with averages of 454·3 and 486·5 respectively for the years 1925–7 and 1921–4. Compared with the corresponding figures for 1927 the incidence of sickness shows a marked decrease, having fallen from 810·7 to 701·4 per 1,000 for all cases, and from 467·8 to 430·1 for admissions to hospital or sick quarters. The number of sick daily remains fairly constant on comparison both with the figures for 1927 and with the averages of the two previous periods.

4. At home, the total incidence of sickness has fallen from 604·4 to 523·1 per 1,000, and compares very favourably with averages of 670·1 and 857·5 per 1,000 over the two previous periods. Abroad, an equally satisfactory reduction in the incidence of sickness is to be noted, 1161·8 per 1,000 in 1928, compared with 1347·5 per 1,000 in 1927, and averages of 1279·7 and 1804·5 per 1,000 during the periods 1925–7 and 1921–4 respectively.

5. The average duration of each case admitted to hospital or sick quarters at home has risen from 19·7 days in 1927 and averages of 18·6 and 18·1 days for the previous periods to 21·5 days in 1928, while the average number of days sickness per head in 1928 was 7·7 compared with 7·2 in 1927, and averages of 6·8 in each of the two previous periods. Abroad, the average duration per case of patients in hospital or sick quarters rose from 16·8 in 1927 to 17·2 in 1928, but the 1928 figure compares favourably with the corresponding average figures of 17·8 and 18·1 for the

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years 1925–7 and 1921–4 respectively. The average number of days sickness per head abroad fell from 13·4 in 1927, and averages of 13·1 and 15·4 for the two previous periods, to 11·8 in 1928. For the force as a whole, the average duration per case, both including and excluding 48 hour cases, has increased compared both with 1927 and the two previous periods, while the average number of days sickness per head remains approximately the same.

6. Sickness, deaths, and final invalidings during 1928, are analysed by disease and injury group in table II, page 10, to show the number of cases and percentage of total attributable to each group. The outstanding information in the table is the very considerable reduction in the share of the total sickness taken by sandfly, malaria, and influenza—about 50 per cent. decrease compared both with 1927 and the average of the years 1925–7. Injury constituted 18·4 per cent. of sickness in 1928 compared with averages over the two previous periods of 15·9 and 13·8, and was responsible for 70·8 per cent. of deaths, and 11·6 per cent. of final invalidings compared with 64·3 and 10·7 in 1927, and averages of 70·7 and 68·7 per cent. of deaths and 8·4 and 4·0 per cent. of final invalidings during the 1925–7 and 1921–4 periods respectively.

7. The causes of death from disease were as follows :—

Tuberculosis :—	
Pulmonary	4
Peritoneal	1
Duodenal ulcer	4
Enteric group	5
Cerebral hæmorrhage (result of war injury)	1
Acute nephritis	2
Chronic nephritis	1
Appendicitis	2
Cellulitis	2
Malignant endocarditis	2
Broncho-pneumonia	3
Meningitis (influenzal)	1
Encephalitis lethargica	1
Carcinoma of sigmoid	1
Cerebellar cyst	1
Bulbar paralysis	1
Cerebral abscesses	1
Otitis media	1
Acute bronchitis	1
Heatstroke	1
Acute dilation of heart	1
Pernicious anaemia	1
Myocardial degeneration of heart (fatty)	1
Tropical abscess of liver	1

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8. One hundred and eighty-nine cases were finally invalided, 167 for disease and 22 for injury, compared with 185 and 21 respectively in 1927. Included in these figures are eight airmen who were invalided with less than six months service and 39 airmen who were found unfit under present standards. The chief causes of invaliding were as follows :—

Psychoneurosis	28
Tuberculosis—Pulmonary, 19 Other, 3 }	22
Defective vision	16
Heart (valvular disease)	10
Epilepsy	8
Mental disease	11
Chronic suppurative otitis media	7
Fractures	16

The same diseases head the list of causes of invaliding each year, and psychoneurosis and tuberculosis have always proved the most frequent. The most noteworthy point is the lessening frequency of chronic suppurative otitis media as a cause of invaliding ; from 1924 to 1928 the number of cases invalided for this reason were 33, 23, 32, 17, and 7 respectively.

9. The rate of invaliding from commands abroad fell appreciably in 1928, from 25·8 in 1927, and averages of 23·3 and 22·4 respectively during the two previous periods to 17·0. The fall was largely due to the approximate return to average of the invaliding rate from the Mediterranean Littoral, which during 1927 rose to 28·2 from averages of 16·6 and 15·7 during the two earlier three-yearly periods, and to a considerable decrease in the rate from India, 20·2 in 1927 to 15·7 in 1928.

10. Sickness at home and abroad is analysed by disease and injury groups in table III, page 11, to show both the incidence and average duration (days) per case. On the incidence by disease group there is little to comment, except that diseases due to infection show a decrease in incidence from 240·9 and 226·3 per 1,000 respectively for the periods 1925–7 and 1921–4 to 208·6 in 1928, while there is a general slight rise in the average duration per case. The incidence of disease as a whole has fallen to 351·1 per 1,000 from previous averages of 382·1 and 419·3, while the injury rate has risen from 72·2 and 67·2 respectively to 79·0 in 1928.

Pulmonary Tuberculosis.

11. Table IV, page 12, analyses the cases of pulmonary tuberculosis which were reported during 1928. The table is not entirely comparable with those of previous years owing to alterations in the age grouping and length of service and to the substitution of type of unit for locality. These changes are the

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result of the recommendation of the Joint Medical Services Sub-Committee on Tuberculosis, whose report was presented in June, 1928, that the medical departments of the three fighting services should each publish the figures given in table IV in their annual reports for information and comparison.

12. The incidence of pulmonary tuberculosis for the whole force in 1928 was the same as for 1927—0·8 per 1,000, but the average duration per case rose from 95·1 to 113·3 days. Of the 24 cases reported one had less than six months service and one had fourteen months service. Eight of the remaining cases had served abroad—in Iraq, Egypt or India—and two of these had served in more than one foreign country. In two cases a tubercular family history was obtained, in five no information on this point was available and in the remaining cases the family history was stated to be good. As regards previous illnesses, four cases had been treated previously for pleurisy—one or more attacks ; six had received earlier treatment for acute bronchitis or pneumonia ; six gave histories of admission to hospital for influenza or myalgia ; three had suffered from anorexia or dyspepsia ; three had reported sick previously with haemoptysis ; one, a medical officer, had been in charge of a heavily infected case of pulmonary tuberculosis earlier in the year and had been fit, in his opinion, until 1928, when, through pressure of work, he began to feel tired ; and one stated that he had never suffered from any illnesses until early in 1928 when, after a thorough soaking at a hockey match, he developed pleurisy.

13. Of the two cases where a definite tubercular family history was obtained, one had a haemoptysis in 1927 while serving in Egypt, with negative results to subsequent examinations for T.B., and developed pneumonia in 1928 at home ; the other had only suffered from one attack of tonsillitis five years prior to the onset of acute bronchitis in 1928 when T.B. were found in his sputum. Of the eight cases who had served abroad, five had no history of tropical disease and three had been treated for sandfly fever ; four of these cases served in Iraq, three in Egypt and one in India, and two who had also served in Iraq had served in India.

Age Groups.

14. The incidence of disease and injury by age groups is analysed in table V, page 13. As in previous years the highest disease incidence in 1928 occurred in the youngest group of airmen. Sickness as a whole and sub-divided into disease and injury tends to decrease in the higher age groups.

Venereal Disease.

15. Venereal disease is analysed in table VI, page 14. The average number of sick daily and the average duration per case both rose slightly compared with 1927, but the number of sick

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daily is, with the exception of 1927, still lower than in any previous year since the inception of these reports, and the average duration per case is slightly below the average figure of previous years. The rise in the average duration per case figure was due to the increased average number of days treatment afforded in the cases of primary syphilis, and the increased daily sick figure was also chiefly the result of a higher incidence of the same disease. The incidence of venereal disease as a whole rose in 1928 to 18·2 per 1,000 from 17·5 per 1,000 in 1927, but remained lower than in any year prior to 1926. The incidence of acute gonorrhœa remained within a decimal point of the corresponding figure for 1927, 11·7 compared with 11·8 in 1927, as also did the incidence of relapses, 2·0 in 1928, and 2·2 in 1927.

Types of Unit.

16. Table VIII, page 18, analyses the incidence of disease and injury, death, final invaliding and sick daily in the force at home and abroad by types of unit. As in previous years the flying units, which demand a high standard of fitness, show the lowest sickness incidence. The incidence of disease is twice as heavy in flying units abroad as in those stationed at home, while in miscellaneous units, headquarters, personnel depôts, etc., abroad, the incidence of disease is three times that of the home figure. Depôts whether abroad or at home show approximately the same incidence of disease. The figures for 1927 showed a similar apportioning of disease incidence. The incidence of deaths, as is to be expected, is highest in the flying units, but, contrary to what might have been expected, the incidence of injury in this type of unit is not much higher than that of the depôts and is lower than that of the miscellaneous units, headquarters, and personnel depôts.

Trade Groups.

17. Table IX, page 19, analyses the incidence of certain disease groups and all diseases and injuries, by trade groups. The disease groups selected for this analysis are those which were responsible during the year for the bulk of the medical non-effectiveness in the force. The lowest disease incidence occurred among the officers, cadets and airman pilots, and the highest in the aircraft apprentices, while the lowest injury incidence was found in aircraft apprentices and the highest among fitters with the officer, cadet and airman pilot group second. As in previous years the highest incidence of venereal disease is shown by the drivers, and this presumably is, from the nature of their duty, to be expected, nor is it surprising to find the highest incidence of upper air passage infections among aircraft apprentices (under 18 years). During the last four years influenza has shown the highest incidence in the officer, cadet and airman pilot group, with the exception of 1925, when a considerable epidemic occurred

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among aircraft apprentices. This is probably due to the fact that the majority of this group live off the stations and mix to a greater extent with the civil population thus increasing their risk of infection.

Nosological Tables.

18. Table XII, page 22, is the main nosological table of the report and analyses diseases, injuries, deaths and invalids in the force at home, abroad and as a whole. Certain diseases mainly of the tropical variety and marked with an asterisk in table XII, are analysed in greater detail in table VII, page 16. Figures for the Fleet Air Arm, which were shown separately in table I, page viii, are included in the home or abroad figures, as appropriate, in table XII. The heading "No appreciable disease" includes all cases, except mental and epileptic, which were admitted to hospital or sick quarters for observation and in which no confirmation of disease or injury was made.

19. In table VII, page 16, the incidence of tropical diseases is compared by commands abroad, and certain diseases responsible for much of the medical non-effectiveness and which are prevalent both at home and abroad are analysed by commands. Comparing the figures for 1928 with those for 1927, the incidence of dysentery has fallen in all commands abroad and is again lowest in the Mediterranean Littoral. The figure for typhoid fever is higher in Iraq and India but lower in the Littoral, while paratyphoid A and B are higher in the Littoral and Iraq and lower in India. The total malarial incidence shows a marked decrease in all commands and this was due not only to improved climatic conditions but also to intensive anti-malarial measures, to which further reference is made in chapter IV. In India and the Mediterranean Littoral the incidence of sandfly fever was higher in 1928 than in 1927, but in Iraq it showed a decrease.

20. At home the incidence of venereal disease rose from 12·5 per 1,000 in 1927 to 13·5 in 1928, in the Mediterranean Littoral it fell from 34·6 to 24·1, in Iraq it rose from 29·9 to 46·8 and in India it fell from 18·2 to 14·1. The incidence of diseases caused by infection at home was 148·2 per 1,000 compared with 335·6 in the Littoral, 455·6 in Iraq, 361·9 in India; the corresponding figures for 1927 were 172·5, 387·7, 514·1, and 482·3—a general decrease in all commands.

Fleet Air Arm.

21. The incidence of sickness in the Fleet Air Arm is shown in table I, page viii. Both including and excluding 48-hour cases there was an increase in the sickness incidence in 1928 compared with 1927. The death and final invaliding rates decreased slightly.

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Injury.

22. Table X, page 20, analyses all cases of injury for the force as a whole during 1928 by cause of accident, nature of injury and whether the individual concerned was on or off duty at the time of the accident. When accidents are caused by athletics, on or off duty is determined by whether or not the game or exercise was organised by the service. Heatstroke, sunstroke and heat exhaustion are not considered as injuries for the purpose of this analysis. Causes of injury to feet by ill-fitting boots—fifteen in number—have also been excluded from the table.

23. The total number of cases in 1928 was 2,364, an incidence per 1,000 of 77·6 compared with 70·6 in 1927. The percentage of accidents on duty was 57 in 1928 compared with 56 in 1927. As in previous years the commonest site of injury was the lower limb and the percentage of 50 for 1928 closely corresponds to that of the preceding years.

24. Flying accidents in 1928 accounted for 6·6 per cent. of all injuries compared with 6·4 in 1927, 7·1 in 1926, 6·9 in 1925 and 9·5 in 1924. Seventy-six per cent. of deaths due to injury occurred in accidents on duty and 68 per cent. were the results of flying accidents compared with 70 per cent. in 1927.

25. *Injuries sustained in flying accidents.*—Table XI, page 21, analyses flying accidents during the last three years. The percentage of deaths to all flying casualties was 41 in 1928 compared with 39 in 1927 and 44 in 1926. All the officers belonged to the general duties branch, and, of the airmen, 23 were pilots or under training as such, nine of whom died, and 49, of whom nineteen died, belonged to the following grouped trades :—fitters nineteen, carpenters and riggers twelve, wireless operators nine, metal workers eight, and aircrafthands one.

26. *Injuries caused by airscrews.*—There were 25 cases of injury due to airscrews in 1928 compared with 28 in 1927, and included in the figure are five cases where personnel were struck by the blades when not actually swinging the airscrew. No deaths and no invalids were reported during 1928.

27. *Injuries sustained while starting engines.*—Forty-one cases occurred both in 1928 and in 1927. There were no deaths and no invalids from this cause and the average duration per case was 24 days compared with 33 days in 1927. Injuries sustained in starting aircraft engines have been given in the preceding paragraph and are not included in these figures.

28. *Injuries caused by motor vehicles (other than while starting engines).*—Four hundred and ninety eight cases were reported during 1928 compared with 424 in 1927, resulting in 22 deaths and thirteen invalids in 1928 compared with ten deaths and six

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invalids in 1927. Of the injuries sustained in the 22 fatal cases, two were due to accidents on duty and twenty off duty, while of the 13 invalids twelve were injured in accidents off duty and one on duty. . A further analysis of this type of accident follows :—

(i) *Motor cycles.*—Four hundred and two cases, 81 per cent. of all accidents due to motor vehicles and 17 per cent. of all accidents, were the result of injuries sustained while riding motor cycles. Two deaths and one invalid resulted from accidents on duty and fourteen deaths and eleven invalids off duty.

(ii) *Occupants of lorries or tenders.*—The number of cases in 1928 showed a great decrease compared with previous years, eight cases of which four were on duty compared with twenty all on duty in 1927, and 47, 43 on duty, in 1926. There were no deaths and no invalids.

(iii) *Occupants of motor cars.*—Fifty-two cases, 51 off duty, occurred in 1928 compared with 38 all off duty in 1927. Four deaths and one invalid were the result of accidents of this nature and all occurred off duty.

(iv) *Non-occupants of motor vehicles.*—Thirty-six cases were reported—three R.A.F. transport, 23 civilian vehicles and ten unknown—in four of which the individual was on duty at the time of the accident and 32 were off duty. There were two deaths off duty and no invalids. The corresponding figures in 1927 were 35 cases, three on duty, no deaths and no invalids.

29. *Injuries sustained in athletics.*—Nine hundred and forty-six cases, equivalent to an incidence of 31·0 compared with 28·5 per 1,000 in 1927, were reported during 1928.

Seven hundred and eighty-four of these occurred during organised games, 130 were off duty and in 32 cases the nature of the game or exercise was not stated. One death occurred while bathing. Football accounted for the majority of the injuries, 68 per cent. compared with 66 per cent. in 1927, and, as in previous years, injury to the knee was the commonest injury, with injury to the ankle next in frequency ; 596 cases occurred on duty and 49 off duty and the figures for knee and ankle injuries were 177 and 117 respectively, compared with 143 and 113 respectively out of a total of 564 in 1927.

30. *Wounds in action.*—One officer was killed by rifle fire while flying.

31. *Accidental gunshot wounds.*—There were six cases with no deaths and three invalids in 1928 compared with ten cases, no deaths and no invalids in 1927.

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32. *Injuries sustained during voluntary parachute descents.*—Three cases with no deaths and no invalids were reported in 1928 compared with twelve cases, one of which was fatal, in 1927. Emergency parachute descents are included under flying accidents.

33. *Injuries caused by animals.*—Five cases, three caused by dog bites, one by a hornet and one by a ray fish while bathing, were reported during the year. There were no deaths and no invalids.

34. *Injuries sustained in workshops.*—Fifty-three cases resulting in one death and no invalids occurred during 1928 compared with 57 cases and three invalids in 1927.

35. *Other injuries sustained on duty.*—Two hundred and forty-seven cases resulting in three deaths and three invalids were reported in 1928. The corresponding figures in 1927 were 199 cases, one death and one invalid.

36. *Other injuries sustained off duty or on leave.*—Three hundred and fifty-four cases, including five suicides or attempted suicides, occurred in 1928. There were three deaths, all by suicide, and no invalids.

37. *Other injuries for which complete details were not available.*—Excluded from the preceding analysis were 28 cases coming under this heading.

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TABLE II.—SICKNESS, DEATHS AND INVALIDS.

Disease Group.	1928.			Percentage of Total.								
				Cases.			Deaths.			Invalids.		
	Cases.	Deaths.	Invalids.	1928.	1925-7.	1921-4.	1928.	1925-7.	1921-4.	1928.	1925-7.	1921-4
Dysentery	82	—	—	0·6	*1·1*	*1·4*	—	*0·2*	*0·4*	—	—	*0.2*
Enteric group ..	48	5	—	0·4	*0·3*	*0·2*	3·6	*2·9*	*1·9*	—	—	—
Influenza	408	2	—	3·1	*6·3*	*5·7*	1·5	—	*0·2*	—	—	—
Malaria	628	—	—	4·8	*8·6*	*6·5*	—	*1·7*	*0·8*	—	*0·3*	*0·1*
Pneumonia ..	47	3	—	0·4	*0·4*	*0·5*	2·2	*3·6*	*6·0*	—	—	—
Pyrexia of unknown origin	35	—	—	0·3	*0·3*	*0·8*	—	—	*0·2*	—	—	—
Sandfly fever ..	505	—	—	3·9	*4·7*	*8·3*	—	—	—	—	—	—
Tuberculosis ..	32	5	22	0·2	*0·3*	*0·4*	3·6	*4·1*	*3·7*	11·6	*12·4*	*14·2*
Venereal diseases ..	556	—	—	4·2	*4·0*	*5·7*	—	—	—	—	*0·3*	*1·2*
Pyæmia and septicæmia	3	1	—	0·0	*0·0*	*0·0*	0·7	*1·9*	*2·5*	—	—	—
Other diseases due to infection	4,011	1	8	30·6	*26·9*	*25·2*	0·7	*1·2*	*1·7*	4·2	*2·4*	*1·7*
Contacts and carriers	135	—	—	1·0	*0·3*	*0·4*	—	—	—	—	—	*0·1*
Nervous system and brain	240	5	57	1·8	*1·7*	*2·1*	3·6	*2·4*	*2·1*	30·2	*24·6*	*24·8*
Eye	143	—	20	1·1	*1·0*	*1·1*	—	—	—	10·6	*10·5*	*7·2*
Ear and nose ..	245	1	11	1·9	*1·8*	*1·9*	0·7	—	—	5·8	*11·8*	*11·6*
Circulatory system	150	4	19	1·1	*1·0*	*1·3*	2·9	*2·6*	*2·7*	10·1	*7·6*	*8·2*
Lymphatic system..	13	—	3	0·1	*0·1*	*0·1*	—	—	*0·2*	1·6	*0·8*	*1·1*
Respiratory system (excluding tuberculosis and pneumonia)	412	1	7	3·1	*3·0*	*2·8*	0·7	—	*1·5*	3·7	*3·9*	*4·1*
Teeth and gums ..	71	—	—	0·5	*0·6*	*0·6*	—	—	—	—	*0·3*	*0·1*
Digestive system ..	1,223	6	7	9·3	*8·4*	*7·3*	4·4	*6·0*	*4·4*	3·7	*3·3*	*3·6*
Disorders of nutrition and metabolism	3	—	1	0·0	*0·0*	*0·0*	—	*0·2*	*0·2*	0·5	*0·7*	*0·5*
Generative system..	260	—	1	2·0	*1·9*	*1·6*	—	—	—	0·5	*0·1*	*0·1*
Organs of locomotion	378	—	9	2·9	*2·9*	*2·8*	—	—	—	4·8	*8·9*	*11·9*
Areolar tissue and skin	757	—	1	5·8	*5·8*	*6·7*	—	—	—	0·5	*0·7*	*1·3*
Urinary organs ..	123	2	1	0·9	*0·6*	*0·5*	1·5	*0·2*	*0·8*	0·5	*2·7*	*2·9*
Tumours and cysts	57	1	—	0·4	*0·6*	*0·5*	0·7	*1·4*	*1·2*	—	*0·1*	*0·6*
Poisons	31	3	—	0·2	*0·3*	*0·3*	2·2	*0·7*	*0·8*	—	—	*0·1*
Debility	31	—	—	0·2	*0·4*	*0·6*	—	—	—	—	*0·4*	*0·2*
Other diseases ..	70	—	—	0·5	*0·6*	*0·8*	—	—	—	—	*0·1*	*0·1*
Total: all diseases	10,697	40	167	81·6	*84·1*	*86·2*	29·2	*29·3*	*31·3*	88·4	*91·6*	*96·0*
Total: all injuries	2,408	97	22	18·4	*15·9*	*13·8*	70·8	*70·7*	*68·7*	11·6	*8·4*	*4·0*
Total: all disabilities	13,105	137	189	100·0	*100·0*	*100·0*	100·0	*100·0*	*100·0*	100·0	*100·0*	*100·0*

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TABLE III.—SICKNESS AT HOME AND ABROAD, ANALYSED BY DISEASE AND INJURY GROUPS.

Disease group.	Case incidence per 1,000 of strength.									Average duration of each case (days).								
	Home.			Abroad.			Total force.			Home.			Abroad.			Total force.		
	Average 1921–24.	Average 1925–27.	1928.	Average 1921–24.	Average 1925–27.	1928.	Average 1921–24.	Average 1925–27.	1928.	Average 1921–24.	Average 1925–27.	1928.	Average 1921–24.	Average 1925–27.	1928.	Average 1921–24.	Average 1925–27.	1928.
Diseases caused by infection ..	176·6	172·4	148·2	500·8	417·9	374·9	226·3	240·9	208·6	17·2	15·5	17·4	15·8	15·3	15·0	16·5	15·4	16·3
Contacts and carriers	2·1	1·4	5·8	0·9	0·7	0·6	1·8	1·2	4·4	11·1	14·5	14·4	19·5	13·3	25·8	12·3	14·3	14·8
Effects of parasites	0·6	0·5	0·8	2·5	2·4	1·8	1·1	1·0	1·1	6·3	16·4	16·9	20·6	27·7	13·6	15·2	23·7	15·3
Diseases of nervous system and brain	9·3	6·3	7·4	12·6	12·2	9·1	10·2	7·9	7·9	29·4	36·7	39·4	54·7	53·5	46·9	38·0	43·9	41·7
Diseases of the eye	5·3	4·5	4·7	5·6	5·4	4·6	5·4	4·7	4·7	18·3	20·7	18·2	33·0	30·9	27·7	22·5	24·0	20·6
Diseases of the ear and nose ..	8·7	6·0	6·3	9·9	13·7	12·7	9·0	8·1	8·0	20·7	22·2	23·4	22·6	24·3	16·3	21·2	23·2	20·4
Diseases of the circulatory system	4·7	3·6	4·9	9·8	7·6	5·1	6·1	4·8	4·9	24·3	35·6	42·7	48·4	39·2	39·2	35·0	37·2	41·7
Diseases of the lymphatic and ductless glands	0·3	0·4	0·4	0·3	0·3	0·5	0·3	0·3	0·4	39·0	39·5	75·4	45·7	84·2	45·8	41·1	50·3	66·3
Diseases of the respiratory system	12·8	12·7	11·9	16·0	15·8	17·9	13·7	13·6	13·5	17·5	17·1	22·8	20·4	18·5	17·4	18·4	17·6	20·9
Diseases of the teeth and gums ..	2·8	3·0	2·2	3·5	2·8	2·6	3·0	2·9	2·3	9·5	10·1	10·3	10·0	10·5	10·6	9·6	10·2	10·4
Diseases due to disorders of nutrition or metabolism	0·2	0·2	0·1	0·1	0·3	0·1	0·2	0·2	0·1	31·3	26·6	61·5	17·5	42·6	4·0	29·8	33·0	42·3
Diseases of the digestive system	28·9	33·5	38·1	53·3	49·9	45·9	35·6	38·1	40·1	20·4	21·5	23·5	17·7	19·1	20·7	19·2	20·7	22·7
Diseases of the generative system	6·5	6·7	7·9	10·4	14·1	10·2	7·6	8·8	8·5	19·2	22·9	29·6	20·2	21·0	19·6	19·6	22·1	26·4
Diseases of the organs of locomotion	13·3	12·1	11·5	15·0	16·3	14·8	13·5	13·2	12·4	17·8	20·5	25·4	20·7	18·9	18·1	18·7	20·0	23·1
Diseases of the areolar tissue and skin	35·9	27·0	25·9	23·5	23·9	21·8	32·5	26·2	24·8	16·1	18·0	20·5	17·0	16·4	14·9	16·3	17·6	19·2
Diseases of the urinary organs ..	2·4	2·0	2·9	3·2	4·3	7·3	2·6	2·6	4·0	31·2	29·0	38·9	46·5	32·8	35·2	36·4	30·7	37·1
Tumours and cysts	2·6	2·5	2·1	2·6	3·1	1·1	2·6	2·7	1·9	18·0	18·2	18·5	25·1	21·1	58·1	20·0	19·2	24·8
Poisons	1·0	0·5	0·5	3·2	4·0	2·3	1·6	1·5	1·0	6·7	9·2	13·8	13·4	12·9	16·2	10·4	11·9	15·2
All other diseases	4·7	2·5	1·8	8·9	5·9	3·6	5·9	3·4	2·3	11·0	14·0	14·1	22·0	16·3	12·1	15·6	15·1	13·2
Total, all diseases	318·7	297·7	283·6	682·0	600·4	536·9	419·3	382·1	351·1	17·9	17·8	20·8	17·9	17·6	17·0	17·9	17·7	19·2
General injuries	4·7	6·8	8·6	18·3	9·7	11·3	8·5	7·6	9·4	16·1	20·6	23·4	15·1	18·5	18·7	15·5	19·9	21·9
Local injuries	55·2	61·6	63·7	68·0	72·3	86·1	58·8	64·6	69·7	19·2	22·0	24·5	20·6	19·4	16·9	19·7	21·2	22·0
Total, all injuries..	59·9	68·4	72·4	86·3	82·0	97·4	67·2	72·2	79·0	19·0	21·8	24·3	19·4	19·3	17·1	19·1	21·0	22·0
Total, all disabilities	378·6	366·1	356·0	768·6	682·4	634·3	486·5	454·3	430·1	18·1	18·6	21·5	18·1	17·8	17·0	18·1	18·3	19·7

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TABLE IV.—PULMONARY TUBERCULOSIS, 1928.

Age.	No. of cases.			Incidence per 1,000 of strength.	Trade group.	No. of cases.	Incidence per 1,000 of strength.	Length of service.	No. of cases.	Incidence per 1,000 of strength.	Type of unit.	No. of cases.	Incidence per 1,000 of strength.
	Home.	Abroad.	Total.										
Under 20 ..	3	—	3	0·6	Officers, cadets and airman pilots.	3	0·8	Under 1 year ..	3	0·7	Flying units ..	8	0·5
20–24 incl. ..	9	4	13	1·1	Aircrafthands ..	7	1·1	1 year and under 5 years.	8	0·7	Depôts (store and repair), ground schools and armoured car companies.	11	1·1
25–29 incl. ..	5	—	5	0·6	Aircraft apprentices.	2	0·7	5 years and under 10 years.	10	0·9			
30–34 incl. ..	—	—	—	—	Clerks	1	0·4	10 years and over	3	0·8			
35–39 incl. ..	1	—	1	0·7	Drivers	1	0·5				Miscellaneous units, headquarters, personnel depôts, etc.	5	0·9
40–44 incl. ..	—	—	—	—	Metal workers ..	3	1·3						
45 and over..	2	—	2	6·9	Carpenters and riggers.	4	1·2						
					Fitters	2	0·5						
					Other skilled trades	1	0·3						
Total ..	20	4	24	0·8		24	0·8		24	0·8		24	0·8

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TABLE V.—DISEASE AND INJURY ANALYSED BY AGE GROUPS.

Age last birthday.	Average strength.			Case incidence per 1,000 of strength.								
				Disease.			Injury.			All disabilities.		
	Home.	Abroad.	Total.	Home.	Abroad.	Total.	Home.	Abroad.	Total.	Home.	Abroad.	Total.
Airmen—												
Under 18 ..	1,838	—	1,838	590·9	—	590·9	54·9	—	54·9	645·8	—	645·8
18 and 19..	3,204	68	3,272	320·8	*	322·4	74·6	*	73·7	395·4	*	396·1
20 and 21..	3,252	953	4,205	271·8	516·3	327·2	97·5	113·3	101·1	369·3	629·6	428·3
22 and 23..	2,324	2,043	4,367	277·6	550·2	405·1	83·0	95·0	88·6	360·6	645·1	493·7
24 and 25..	2,624	1,416	4,040	250·0	577·0	364·6	63·6	111·6	80·4	313·6	688·6	445·0
26 and 27..	2,506	1,047	3,553	249·4	556·8	340·0	73·4	82·1	76·0	322·8	639·0	416·0
28 and 29..	1,431	543	1,974	238·3	644·6	350·1	62·2	106·8	74·5	300·5	751·4	424·5
30 to 34 ..	1,652	712	2,364	198·6	432·6	269·0	44·2	61·8	49·5	242·7	494·4	318·5
35 to 39 ..	684	264	948	165·2	484·8	254·2	36·5	94·7	52·7	201·7	579·5	307·0
40 and over	405	121	526	190·1	504·1	262·4	12·3	33·1	17·1	202·5	537·2	279·5
Total airmen ..	19,920	7,167	27,087	290·3	542·8	357·1	69·9	94·7	76·5	360·2	637·5	433·6
Total officers and cadets	2,439	944	3,383	229·2	492·6	302·7	92·2	117·6	99·3	321·4	610·2	402·0
Total: all ranks	22,359	8,111	30,470	283·6	536·9	351·1	72·4	97·4	79·0	356·0	634·3	430·1

* Not calculated.

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TABLE VI.—VENEREAL DISEASE.

Disease.	Home.				Abroad.				Total Force.			
	No. of cases.	Case incidence per 1,000 of strength	Average.		No. of cases.	Case incidence per 1,000 of strength	Average.		No. of cases.	Case incidence per 1,000 of strength	Average.	
			No. sick daily.	Duration of case (days).			No. sick daily.	Duration of case (days).			No. sick daily.	Duration of case (days).
Gonorrhœa—acute ..	216	9·6	32·9	55·8	141	17·4	22·3	58·0	357	11·7	55·2	56·7
relapse ..	37	1·7	5·3	52·2	24	2·9	2·8	42·3	61	2·0	8·1	48·3
Total ..	253	11·3	38·2	55·3	165	20·3	25·1	55·7	418	13·7	63·3	55·4
Syphilis—admissions :												
Primary	38	1·7	5·6	54·6	22	2·7	3·0	49·4	60	1·9	8·6	52·7
For further treatment	2	0·1	0·2	32·5	—	—	—	—	2	0·1	0·2	32·5
Total	40	1·8	5·8	53·5	22	2·7	3·0	49·4	62	2·0	8·8	52·0
Soft chancre	9	0·4	0·6	22·6	67	8·3	6·3	34·5	76	2·5	6·9	33·1
Total, Venereal disease 1928	302	13·5	44·6	54·0	254	31·3	34·4	49·6	556	18·2	79·0	52·0
1927	*269*	*12·5*	*40·8*	*55·4*	*259*	*30·1*	*31·6*	*44·6*	*528*	*17·5*	*72·4*	*50·1*
1926	*357*	*14·9*	*59·5*	*60·8*	*208*	*23·0*	*31·8*	*55·9*	*565*	*17·1*	*91·3*	*59·0*
1925	*400*	*16·8*	*57·0*	*52·0*	*256*	*27·9*	*36·4*	*51·9*	*656*	*19·9*	*93·4*	*51·9*
1924	*432*	*19·2*	*59·3*	*50·3*	*272*	*30·0*	*44·0*	*59·2*	*704*	*22·3*	*103·3*	*53·8*
1923	*482*	*23·8*	*64·8*	*49·1*	*299*	*31·4*	*42·3*	*51·7*	*781*	*26·2*	*107·2*	*50·1*
1922	*525*	*24·9*	*76·1*	*52·9*	*263*	*33·5*	*34·4*	*47·7*	*788*	*27·2*	*110·5*	*51·2*
1921	*709*	*32·3*	*94·2*	*48·5*	*314*	*49·2*	*52·2*	*60·7*	*1,023*	*36·1*	*146·4*	*52·2*

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TABLE VII.—DETAILED NOSOLOGICAL TABLE OF

Disease.	Home. Average strength, 22,359.				Mediterranean Littoral. Average strength, 3,284.			
	No. of cases.	Case incidence per 1,000 of strength.	Average.		No. of cases.	Case incidence per 1,000 of strength.	Average.	
			No. sick daily	Duration of case.			No. sick daily	Duration of case.
Diseases caused by Infection.				Days.				Days.
Dysentery—								
Clinical, primary ..	—	—	—	—	7	2·1	0·3	14·3
,, recurrent ..	1	0·0	0·1	43·0	—	—	—	—
Bacillary, primary ..	—	—	—	—	14	4·3	0·6	16·2
,, recurrent ..	—	—	—	—	—	—	—	—
Amœbic, primary ..	—	—	—	—	2	0·6	0·3	64·0
,, recurrent ..	10	0·4	1·5	54·1	2	0·6	0·1	19·5
Total—Dysentery ..	11	0·5	1·6	53·1	25	7·6	1·3	19·8
Enteric Group—								
Typhoid fever	4	0·2	0·5	48·0	1	0·3	0·4	133·0
Paratyphoid fever, A & B	1	0·0	0·4	144·0	3	0·9	0·6	67·7
Enteritis	109	4·9	2·4	7·9	121	36·8	2·6	7·9
Influenza	292	13·1	8·4	10·5	46	14·0	1·0	8·0
Malaria—								
Clinical, primary.. ..	—	—	—	—	10	3·0	0·4	13·8
,, recurrent ..	7	0·3	0·4	22·3	14	4·3	0·3	8·6
Benign tertian, primary..	—	—	—	—	38	11·6	0·9	8·4
,, ,, recurrent	97	4·3	4·5	17·1	103	31·4	2·8	9·9
Quartan, primary and recurrent	—	—	—	—	1	0·3	0·1	28·0
Malignant tertian, primary	—	—	—	—	9	2·7	0·5	22·3
,, ,, recurrent	3	0·1	0·2	22·7	—	—	—	—
Total—Malaria	107	4·8	5·2	17·6	175	53·3	5·0	10·4
Pyrexia of unknown origin..	14	0·6	0·3	8·9	5	1·5	0·2	17·0
Sandfly fever	—	—	—	—	165	50·2	2·9	6·4
Tuberculosis	27	1·2	7·6	103·2	1	0·3	1·4	520·0
Upper air passage infections	1,553	69·4	36·5	8·6	273	83·1	4·5	6·1
Venereal disease	302	13·5	44·6	54·0	79	24·1	12·2	56·4
Other diseases caused by infection	894	40·0	50·5	20·7	208	63·3	7·5	13·2
Total—All diseases caused by infection ..	3,314	148·2	158·0	17·4	1,102	335·6	39·5	13·1
All other diseases ..	3,028	135·4	201·7	24·4	481	146·5	26·9	20·5
Total—All diseases ..	6,342	283·6	359·6	20·8	1,583	482·0	66·4	15·4
Injuries—								
General injuries	193	8·6	12·3	23·4	37	11·3	1·7	17·2
Local injuries	1,425	63·7	95·3	24·5	271	82·5	10·6	14·4
Total—All injuries ..	1,618	72·4	107·6	24·3	308	93·8	12·4	14·7
Total—All disabilities..	7,960	356·0	467·3	21·5	1,891	575·8	78·8	15·3

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Diseases caused by Infection.

Iraq. Average strength, 2,412.				India. Average strength. 1,915.				Total Force. Average strength, 30,470.			
No. of cases	Case incidence per 1,000 of strength.	Average.		No. of cases	Case incidence per 1,000 of strength.	Average.		No. of cases.	Case incidence per 1,000 of strength.	Average.	
		No. sick daily.	Duration of case.			No. sick daily	Duration of case.			No. sick daily	Duration of case.
			Days.				Days.				Days.
3	1·2	0·1	12·3	—	—	—	—	11	0·4	0·4	13·3
—	—	—	—	—	—	—	—	1	0·0	0·1	43·0
10	4·1	0·7	25·2	19	9·9	0·9	18·1	43	1·4	2·2	19·1
1	0·4	0·4	136·0	1	0·5	0·1	23·0	2	0·1	0·4	79·5
6	2·5	1·4	84·7	2	1·0	0·3	51·0	11	0·4	2·2	73·7
1	0·4	0·4	140·0	1	0·5	0·2	65·0	14	0·5	2·1	56·1
21	8·7	2·9	51·1	23	12·0	1·5	23·2	82	2·7	7·6	33·7
26	10·8	7·3	102·7	5	2·6	1·1	80·4	37	1·2	9·3	91·9
7	2·9	1·4	75·7	—	—	0·3	—	11	0·4	2·7	89·1
206	85·4	4·8	8·5	45	23·5	1·0	7·8	493	16·2	10·9	8·1
42	17·4	1·3	11·7	26	13·6	0·7	9·5	408	13·4	11·4	10·3
5	2·1	0·2	12·8	14	7·3	0·3	8·1	29	1·0	0·9	10·9
5	2·1	0·2	11·2	15	7·8	0·2	5·0	41	1·3	1·1	10·0
24	10·0	0·9	14·0	63	32·9	1·4	8·2	128	4·2	3·4	9·6
26	10·8	0·8	11·3	178	93·0	3·7	7·7	404	13·3	11·8	10·7
—	—	—	—	1	0·5	0·0	6·0	2	0·1	0·1	17·0
4	1·7	0·2	14·2	5	2·6	0·1	9·2	18	0·6	0·8	16·9
1	0·4	0·1	23·0	2	1·0	0·0	7·0	6	0·2	0·3	17·5
65	26·9	2·3	12·8	278	145·2	5·8	7·7	628	20·6	18·4	10·7
13	5·4	0·2	5·8	—	—	—	—	35	1·1	0·8	8·7
233	96·6	5·0	7·9	98	51·2	2·0	7·5	505	16·6	10·1	7·3
—	—	1·1	—	4	2·1	2·2	201·0	32	1·1	12·4	141·3
215	89·1	4·5	7·7	127	66·3	2·3	6·7	2,203	72·3	48·5	8·1
113	46·8	15·2	49·4	27	14·1	6·1	82·7	556	18·2	79·0	52·0
158	65·5	8·0	18·4	60	31·3	3·6	21·7	1,365	44·8	71·5	19·2
1,099	455·6	54·1	18·0	693	361·9	26·5	14·0	6,355	208·6	282·5	16·3
442	183·3	29·9	24·7	298	155·6	16·0	19·6	4,342	142·5	279·4	23·6
1,541	638·9	84·0	19·9	991	517·5	42·5	15·7	10,697	351·1	561·9	19·2
19	7·9	1·4	27·1	27	14·1	1·3	17·9	285	9·4	17·0	21·9
227	94·1	11·8	19·0	135	70·5	7·0	19·0	2,123	69·7	127·5	22·0
246	102·0	13·2	19·6	162	84·6	8·3	18·8	2,408	79·0	144·5	22·0
1,787	740·9	97·2	19·9	1,153	602·1	50·8	16·1	13,105	430·1	706·4	19·7

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TABLE VIII.—SICKNESS IN DIFFERENT TYPES OF UNIT.

Type of Unit.	——	Home.					Abroad.					Total.				
		Incidence per 1,000 of strength.				Average duration of case. (days.)	Incidence per 1,000 of strength.				Average duration of case. (days.)	Incidence per 1,000 of strength.				Average duration of case. (days.)
		Cases.	Deaths.	Invalided out of service.	No. sick daily.		Cases.	Deaths.	Invalided out of service.	No. sick daily.		Cases.	Deaths.	Invalided out of service.	No. sick daily.	
Flying units ..	Disease	179·7	0·9	4·1	9·8	19·9	470·5	1·5	3·1	21·2	16·5	254·6	1·1	3·8	12·7	18·3
	Injury	72·0	4·2	0·8	4·4	22·5	105·9	8·2	0·5	5·1	17·6	80·7	5·2	0·7	4·6	20·9
	Total	251·7	5·1	4·9	14·2	20·7	576·4	9·7	3·6	26·3	16·7	335·3	6·3	4·5	17·3	18·9
Depôts (store and repair), ground schools and armoured car companies	Disease	428·0	1·3	7·3	24·8	21·2	460·3	1·6	3·4	21·6	17·2	438·4	1·4	6·1	23·8	19·8
	Injury	74·0	1·3	1·0	5·7	28·3	67·9	0·3	—	3·0	16·1	72·1	1·0	0·7	4·8	24·6
	Total	502·0	2·6	8·3	30·5	22·2	528·2	1·9	3·4	24·6	17·0	510·5	2·4	6·8	28·6	20·5
Miscellaneous units, headquarters, personnel depôts, etc.	Disease	331·1	1·8	9·9	19·0	21·0	1051·9	2·0	6·1	50·9	17·7	464·1	1·9	9·2	24·9	19·7
	Injury	70·7	1·2	0·7	4·4	22·9	159·7	3·1	1·0	7·4	17·0	87·1	1·5	0·8	5·0	20·9
	Total	401·8	3·0	10·6	23·4	21·4	1211·6	5·1	7·1	58·3	17·6	551·2	3·4	10·0	29·9	19·9
Total	Disease	283·6	1·2	6·2	16·1	20·8	536·9	1·6	3·6	24·9	17·0	351·1	1·3	5·5	18·4	19·2
	Injury	72·4	2·7	0·8	4·8	24·3	97·4	4·4	0·4	4·5	17·1	79·0	3·2	0·7	4·8	22·0
	Total	356·0	3·9	7·0	20·9	21·5	634·3	6·0	4·0	29·4	17·0	430·1	4·5	6·2	23·2	19·7

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TABLE IX.—INCIDENCE OF CERTAIN DISEASES IN THE VARIOUS TRADE GROUPS.

Trade group.	Incidence per 1,000 of strength.								
	Influenza	Upper air passage infections.	Venereal diseases.	Respiratory diseases.	Digestive diseases.	All other diseases.	All diseases.	All injuries.	All disabilities
Aircrafthands	17·0	66·6	22·8	16·7	41·6	180·6	345·3	64·1	409·4
Aircraft apprentices ..	7·7	176·4	0·7	14·7	64·5	244·7	508·8	52·9	561·7
Carpenters and riggers ..	11·0	60·4	19·2	9·8	33·2	192·1	325·6	87·2	412·8
Clerks	13·5	60·2	22·0	15·2	39·0	190·3	340·2	64·1	404·3
Drivers	14·3	55·1	29·0	10·8	38·3	237·5	385·0	93·9	478·9
Fitters	9·9	59·8	21·4	10·4	29·0	196·3	326·9	111·5	438·4
Metal workers	13·3	63·1	22·3	11·2	33·5	189·9	333·3	80·8	414·1
Officers, cadets and airman pilots	19·3	57·7	7·2	15·2	40·0	159·4	298·8	104·6	403·3
Other skilled trades.. ..	10·6	63·3	19·4	13·7	43·4	187·6	338·0	57·4	395·4
Total force	13·4	72·3	18·2	13·5	40·1	193·5	351·1	79·0	430·1

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TABLE X.—INJURIES.

—	Number of cases.							
	Airscrew.	Athletics.	Flying.	Motor transport.	Starting motor engines.	Other causes.	Total.	Percentage of total cases.
On duty	24	784	157	30	35	310	1,340	57
Off duty	1	130	—	465	5	357	958	40
Not stated	—	32	—	3	1	30	66	3
Total	25	946	157	498	41	697	2,364	100
Nature of injury :								
General	2	4	86	125	2	37	256	11
Head or face ..	1	81	46	146	1	94	369	16
Trunk	—	43	9	22	2	51	127	5
Upper extremity .	19	137	7	67	35	173	438	18
Lower extremity .	3	681	9	138	1	342	1,174	50
Total	25	946	157	498	41	697	2,364	100
Deaths :								
On duty	—	1	65	2	—	5	73	76
Off duty	—	—	—	20	—	3	23	24
Total	—	1	65	22	—	8	96	100

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TABLE XI.—FLYING CASUALTIES ON DUTY.

Rank.	Number of casualties.		
	1926.	1927.	1928.
Officers.			
Killed	*47*	*32*	36
Injured	*55*	*44*	45
Cadets.			
Killed	*2*	*2*	1
Injured	*5*	*1*	3
Airmen.			
Killed	*29*	*18*	28
Injured	*41*	*36*	44
Total, all ranks.			
Killed	*78*	*52*	65
Injured	*101*	*81*	92
Total	*179*	*133*	157
Deaths as a percentage of total flying casualties ..	*44*	*39*	41
Average duration of each case (days) :—			
Deaths included	*27*	*27*	23
Deaths excluded	*48*	*45*	40

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TABLE XII.—NOSOLOGICAL TABLE FOR HOME, ABROAD, AND TOTAL FORCE, 1928.

Disease.	Home. Average strength, 22,359.						Abroad. Average strength, 8,111.							Total force. Average strength, 30,470.					
	No. of cases.	No. of deaths.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages.		No. of cases.	No. of deaths.	No. invalided to United Kingdom.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages.		No. of cases.	No. of deaths.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages.	
					No. sick daily.	Duration of case.						No. sick daily.	Duration of case.					No. sick daily.	Duration of case.
Diseases caused by infection.						Days.							Days.						Days.
Diphtheria	12	—	—	0·5	1·3	38·6	3	—	—	—	0·4	0·2	30·7	15	—	—	0·5	1·4	35·0
*Dysentery	11	—	—	0·5	1·6	53·1	71	—	7	—	8·8	6·0	30·7	82	—	—	2·7	7·6	33·7
*Enteric group	5	1	—	0·2	0·9	67·2	43	4	15	—	5·3	11·0	94·0	48	5	—	1·6	12·0	91·2
*Enteritis (acute) and gastro-enteritis (acute)	109	—	—	4·9	2·4	7·9	384	—	1	—	47·3	8·5	8·1	493	—	—	16·2	10·9	8·1
*Influenza (including influenzal pneumonia)	292	2	—	13·1	8·4	10·5	116	—	—	—	14·3	3·0	9·6	408	2	—	13·4	11·4	10·3
Leishmaniasis	2	—	1	0·1	0·1	24·0	16	—	—	—	2·0	1·6	36·8	18	—	1	0·6	1·7	35·3
*Malaria	107	—	—	4·8	5·2	17·6	521	—	—	—	64·2	13·2	9·3	628	—	—	20·6	18·4	10·7
Measles	15	—	—	0·7	0·7	17·4	—	—	—	—	—	—	—	15	—	—	0·5	0·7	17·4
Mumps	54	—	—	2·4	3·2	21·6	1	—	—	—	0·1	0·1	26·0	55	—	—	1·8	3·3	21·6
Pneumonia	36	2	—	1·6	3·9	39·2	11	1	2	—	1·4	1·6	52·7	47	3	—	1·5	5·4	42·3
*Pyrexia of unknown origin	14	—	—	0·6	0·3	8·9	21	—	—	—	2·6	0·5	8·5	35	—	—	1·1	0·8	8·7
Rheumatism (acute)	80	—	2	3·6	9·4	43·2	12	—	1	—	1·5	0·9	28·8	92	—	2	3·0	10·4	41·3
Rubella	4	—	—	0·2	0·2	14·2	1	—	—	—	0·1	0·0	11·0	5	—	—	0·2	0·2	13·6
*Sandfly fever	—	—	—	—	—	—	505	—	—	—	62·3	10·1	7·3	505	—	—	16·6	10·1	7·3
Scarlet fever	31	—	—	1·4	4·1	49·0	3	—	—	—	0·4	0·3	38·7	34	—	—	1·1	4·5	48·1
Tuberculosis.																			
Respiratory	20	4	11	0·9	4·4	80·0	4	—	6	8	0·5	3·1	280·0	24	4	19	0·8	7·4	113·3
Other	7	1	2	0·3	3·2	169·7	1	—	3	1	0·1	1·7	616·0	8	1	3	0·3	4·9	225·5
*TOTAL—TUBERCULOSIS	27	5	13	1·2	7·6	103·2	5	—	9	9	0·6	4·7	347·2	32	5	22	1·1	12·4	141·3

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Acute upper air passage infections.																		
Laryngitis	27	—	—	1·2	0·9	11·7	11	—	—	—	1·4	0·2	7·2	38	—	—	1·2	1·1	10·4
Pharyngitis and naso-pharyngitis	849	—	—	38·0	19·4	8·4	366	—	—	—	45·1	6·0	6·0	1,215	—	—	39·9	25·4	7·6
Rhinitis, acute catarrhal	82	—	—	3·7	1·1	4·8	19	—	—	—	2·3	0·3	6·0	101	—	—	3·3	1·4	5·0
Tonsillitis (including quinsy and Vincent's angina)	595	—	—	26·6	15·1	9·3	254	—	—	—	31·3	5·5	8·0	849	—	—	27·9	20·7	8·9
*TOTAL—UPPER AIR PASSAGE INFECTIONS ..	1,553	—	—	69·4	36·5	8·6	650	—	—	—	80·1	12·0	6·8	2,203	—	—	72·3	48·5	8·1
Vaccinia	121	—	—	5·4	2·1	6·3	—	—	—	—	—	—	—	121	—	—	4·0	2·1	6·3
Venereal disease.																			
Gonorrhœa	253	—	—	11·3	38·2	55·3	165	—	1	—	20·3	25·1	55·7	418	—	—	13·7	63·3	55·4
Syphilis	40	—	—	1·8	5·8	53·5	22	—	1	—	2·7	3·0	49·4	62	—	—	2·0	8·8	52·0
Soft chancre	9	—	—	0·4	0·6	22·6	67	—	—	—	8·3	6·3	34·5	76	—	—	2·5	6·9	33·1
*TOTAL—VENEREAL DISEASES	302	—	—	13·5	44·6	54·0	254	—	2	—	31·3	34·4	49·6	556	—	—	18·2	79·0	52·0
Abscess, hand and finger	18	—	—	0·8	0·7	14·8	17	—	—	—	2·1	0·4	9·4	35	—	—	1·1	1·2	12·2
Abscess, other	68	—	—	3·0	3·1	16·6	19	—	1	—	2·3	0·8	15·7	87	—	—	2·9	3·9	16·4
Boils	98	—	—	4·4	3·2	12·1	66	—	—	—	8·1	2·2	12·4	164	—	—	5·4	5·5	12·2
Carbuncles	18	—	—	0·8	0·8	16·3	7	—	—	—	0·9	0·2	12·6	25	—	—	0·8	1·0	15·2
Cellulitis	262	—	1	11·7	9·4	13·2	197	—	2	—	24·3	6·6	12·2	459	—	1	15·1	16·0	12·8
Lymphadenitis and lymph-angitis	40	—	1	1·8	3·1	28·2	34	—	—	—	4·2	1·8	19·6	74	—	1	2·4	4·9	24·2
Osteo-myelitis, periostitis, and osteitis	11	—	—	0·5	2·8	94·2	5	—	2	1	0·6	1·5	107·0	16	—	1	0·5	4·3	93·2
Pyæmia, septicæmia ..	1	1	—	0·0	0·0	5·0	2	—	—	—	0·2	0·4	73·5	3	1	—	0·1	0·4	50·7
Ulcer	4	—	—	0·2	0·2	18·2	2	—	—	—	0·2	0·1	11·5	6	—	—	0·2	0·3	16·0
Other diseases caused by infection	19	—	2	0·8	2·2	41·6	75	1	1	—	9·2	2·2	10·5	94	1	2	3·1	4·3	16·8
*TOTAL—DISEASES CAUSED BY INFECTION	3,314	11	20	148·2	158·0	17·4	3,041	6	43	10	374·9	124·5	15·0	6,355	17	30	208·6	282·5	16·3

* Analysed in further detail in Table VII.

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TABLE XII.—NOSOLOGICAL TABLE FOR HOME, ABROAD, AND TOTAL FORCE, 1928.—*continued.*

Disease.	Home. Average strength, 22,359.						Abroad. Average strength, 8,111.							Total Force. Average strength, 30,470.					
	No. of cases.	No. of deaths.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages.		No. of cases.	No. of deaths.	No. invalided to United Kingdom.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages.		No. of cases.	No. of deaths.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages.	
					No. sick daily.	Duration of case.						No. sick daily.	Duration of case.					No. sick daily.	Duration of case.
						Days.							Days.						Days.
Contacts and carriers ..	130	—	—	5·8	5·1	14·4	5	—	—	—	0·6	0·4	25·8	135	—	—	4·4	5·5	14·8
Effects of parasites ..	17	—	—	0·8	0·8	16·9	15	—	—	—	1·8	0·6	13·6	32	—	—	1·1	1·3	15·3
Other diseases classified by systems. Diseases of nervous system and brain.																			
Neuritis	29	—	—	1·3	3·4	43·4	21	—	2	1	2·6	1·9	33·8	50	—	1	1·6	5·4	39·3
Nerve paralysis	6	—	1	0·3	0·7	42·3	—	—	—	—	—	—	—	6	—	1	0·2	0·7	42·3
Epilepsy (including observation cases)	12	—	8	0·5	0·7	22·2	5	—	1	—	0·6	0·2	14·2	17	—	8	0·6	0·9	19·9
Psychoneurosis	52	—	25	2·3	5·6	39·3	31	—	17	3	3·8	4·8	57·1	83	—	28	2·7	10·4	46·0
Mental diseases (including observation cases) ..	11	—	6	0·5	2·5	84·3	1	—	2	5	0·1	1·5	548·0	12	—	11	0·4	4·0	122·9
Other diseases of nervous system	56	4	8	2·5	4·9	31·9	16	1	1	—	2·0	1·0	23·1	72	5	8	2·4	5·9	29·9
TOTAL—DISEASES OF NERVOUS SYSTEM AND BRAIN	166	4	48	7·4	17·9	39·4	74	1	23	9	9·1	9·5	46·9	240	5	57	7·9	27·3	41·7

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Diseases of the Eye.																		
Infections	59	—	4	2·6	3·1	19·5	23	—	3	—	2·8	1·2	19·0	82	—	4	2·7	4·3	19·4
Other diseases of the eye	47	—	15	2·1	2·1	16·6	14	—	8	1	1·7	1·6	41·9	61	—	16	2·0	3·7	22·4
TOTAL—DISEASES OF THE EYE	106	—	19	4·7	5·3	18·2	37	—	11	1	4·6	2·8	27·7	143	—	20	4·7	8·1	20·6
Diseases of ear and nose.																		
Otitis media, acute ..	28	1	1	1·2	2·0	26·6	11	—	—	—	1·4	0·5	17·4	39	1	1	1·3	2·6	24·0
Otitis media, chronic ..	14	—	5	0·6	0·7	18·0	12	—	5	2	1·5	0·9	26·5	26	—	7	0·9	1·6	21·9
Other diseases of ear and nose	100	—	3	4·5	6·3	23·2	80	—	2	—	9·9	3·2	14·7	180	—	3	5·9	9·5	19·4
TOTAL—DISEASES OF EAR AND NOSE	142	1	9	6·3	9·1	23·4	103	—	7	2	12·7	4·6	16·3	245	1	11	8·0	13·6	20·4
Diseases of the circulatory system.																		
Endocarditis, acute ..	7	1	1	0·3	1·8	95·3	1	1	—	—	0·1	0·5	178·0	8	2	1	0·3	2·3	105·6
Valvular disease of the heart	5	—	8	0·2	2·0	148·4	2	—	1	2	0·2	0·6	106·0	7	—	10	0·2	2·6	136·3
Disease of myocardium ..	2	1	—	0·1	0·2	29·5	1	—	—	—	0·1	0·0	5·0	3	1	—	0·1	0·2	21·3
Disordered action of the heart	51	—	2	2·3	4·8	34·4	20	—	4	2	2·5	1·9	35·0	71	—	4	2·3	6·7	34·5
Varix	22	—	2	1·0	1·7	28·3	10	—	1	—	1·2	0·7	24·6	32	—	2	1·1	2·4	27·2
Other diseases of the circulatory system ..	22	1	2	1·0	2·2	36·7	7	—	1	—	0·9	0·7	38·4	29	1	2	1·0	2·9	37·1
TOTAL—DISEASES OF THE CIRCULATORY SYSTEM	109	3	15	4·9	12·7	42·7	41	1	7	4	5·1	4·4	39·2	150	4	19	4·9	17·1	41·7
Diseases of lymphatic system and ductless glands	9	—	2	0·4	1·9	75·4	4	—	1	1	0·5	0·5	45·8	13	—	3	0·4	2·4	66·3

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TABLE XII.—NOSOLOGICAL TABLE FOR HOME, ABROAD, AND TOTAL FORCE, 1928.—*continued.*

Disease.	Home. Average strength, 22,359.						Abroad. Average strength, 8,111.							Total Force. Average strength, 30,470.					
	No. of cases.	No. of deaths.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages.		No. of cases.	No. of deaths.	No. invalided to United Kingdom.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages.		No. of cases.	No. of deaths.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages.	
					No. sick daily.	Duration of case.						No. sick daily.	Duration of case.					No. sick daily.	Duration of case.
						Days.							Days.						Days.
Diseases of the Respiratory system. (*a*)																			
Bronchitis	88	1	2	3·9	6·1	25·3	44	—	2	1	5·4	2·8	23·3	132	1	3	4·3	8·9	24·6
Tracheitis	117	—	—	5·2	2·8	8·7	70	—	—	—	8·6	1·3	6·7	187	—	—	6·1	4·0	7·9
Asthma	1	—	1	0·0	0·4	136·0	2	—	—	—	0·2	0·1	22·5	3	—	1	0·1	0·5	60·3
Pleurisy	44	—	—	2·0	4·2	34·6	22	—	1	—	2·7	1·2	20·5	66	—	—	2·2	5·4	29·9
Other diseases of the respiratory system ..	17	—	3	0·8	3·3	70·4	7	—	3	—	0·9	1·5	76·3	24	—	3	0·8	4·7	72·1
TOTAL—DISEASES OF THE RESPIRATORY SYSTEM	267	1	6	11·9	16·7	22·8	145	—	6	1	17·9	6·9	17·4	412	1	7	13·5	23·5	20·9
Diseases of teeth and gums	50	—	—	2·2	1·4	10·3	21	—	—	—	2·6	0·6	10·6	71	—	—	2·3	2·0	10·4
Diseases of the Digestive System (excluding tonsillitis).																			
Hypertrophy of tonsils ..	121	—	—	5·4	7·1	21·5	20	—	—	—	2·5	1·4	26·2	141	—	—	4·6	8·5	22·2
Gastritis, acute	27	—	—	1·2	1·9	25·1	15	—	—	—	1·8	0·6	14·9	42	—	—	1·4	2·5	21·5
Gastritis, chronic ..	11	—	—	0·5	1·0	33·7	6	—	3	—	0·7	1·1	69·0	17	—	—	0·6	2·1	46·2

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Dyspepsia	124	—	—	5·5	2·5	7·3	65	—	—	—	8·0	1·3	7.6	189	—	—	6.2	3·8	7·4
Appendicitis	231	—	—	10·3	16·6	26·2	38	1	1	—	4·7	3·9	38·0	269	1	—	8·8	20·5	27·9
Hernia	71	—	1	3·2	6·7	34·7	12	—	—	—	1·5	1·2	37·6	83	—	1	2·7	8·0	35·1
Constipation	51	—	—	2·3	1·6	11·7	42	—	—	—	5·2	0·7	6·2	93	—	—	3·1	2·4	9·3
Colic	30	—	—	1·3	0·9	10·8	12	—	1	—	1·5	0·5	14·8	42	—	—	1·4	1·4	11·9
Hæmorrhoids	68	—	—	3·0	3·9	20·7	36	—	1	—	4·4	2·1	20·9	104	—	—	3·4	5·9	20·8
Jaundice	16	—	—	0·7	0·9	21·3	47	—	2	—	5·8	2·8	21·8	63	—	—	2·1	3·7	21·7
Other diseases of the digestive system	101	5	6	4·5	11·7	42·3	79	—	6	—	9·7	5·3	24·6	180	5	6	5·9	17·0	34·5
TOTAL—DISEASES OF THE DIGESTIVE SYSTEM ..	851	5	7	38·1	54·7	23·5	372	1	14	—	45·9	21·1	20·7	1,223	6	7	40·1	75·8	22·7
Diseases due to disorders of nutrition or metabolism	2	—	1	0·1	0·3	61·5	1	—	—	—	0·1	0·0	4·0	3	—	1	0·1	0·3	42·3
Diseases of the Generative System.																			
Phimosis	24	—	—	1·1	1·4	21·3	15	—	—	—	1·8	0·9	20·8	39	—	—	1·3	2·3	21·1
Balanitis	18	—	—	0·8	0·7	14·9	8	—	—	—	1·0	0·1	5·8	26	—	—	0·9	0·9	12·1
Urethritis	86	—	1	3·8	8·2	35·1	32	—	—	—	3·9	1·6	17·8	118	—	1	3·9	9·8	30·4
Varicocele	17	—	—	0·8	1·3	28·1	4	—	—	—	0·5	0·3	29·8	21	—	—	0·7	1·6	28·4
Hydrocele	2	—	—	0·1	0·2	27·5	1	—	—	—	0·1	0·0	17·0	3	—	—	0·1	0·2	24·0
Epididymitis	3	—	—	0·1	0·3	35·7	4	—	—	—	0·5	0·2	17·8	7	—	—	0·2	0·5	25·4
Other diseases of the generative system	27	—	—	1·2	2·2	29·9	19	—	—	—	2·3	1·3	25·8	46	—	—	1·5	3·5	28·2
TOTAL—DISEASES OF THE GENERATIVE SYSTEM	177	—	1	7·9	14·3	29·6	83	—	—	—	10·2	4·4	19·6	260	—	1	8·5	18·8	26·4

(*a*) Excluding pneumonia and tuberculosis, for which *see* p. 22.

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TABLE XII.—NOSOLOGICAL TABLE FOR HOME, ABROAD, AND TOTAL FORCE, 1928.—*continued.*

Disease.	Home. Average strength, 22,359.						Abroad. Average strength, 8,111.							Total Force. Average strength, 30,470.					
	No. of cases.	No. of deaths.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages.		No. of cases.	No. of deaths.	No. invalided to United Kingdom.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages.		No. of cases.	No. of deaths.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages.	
					No. sick daily.	Duration of case.						No. sick daily.	Duration of case.					No. sick daily.	Duration of case.
						Days.							Days.						Days.
Diseases of Organs of Locomotion.																			
Diseases of the bone ..	12	—	3	0·5	3·3	100·8	4	—	2	—	0·5	0·8	70·0	16	—	3	0·5	4·1	93·1
Diseases of the joints ..	57	—	1	2·5	5·4	34·4	40	—	2	—	4·9	2·6	24·2	97	—	1	3·2	8·0	30·2
Myalgia and lumbago ..	119	—	—	5·3	3·4	10·5	43	—	—	—	5·3	1·0	8·7	162	—	—	5·3	4·4	10·0
Diseases of muscles, tendons and bursæ ..	32	—	—	1·4	2·3	25·8	26	—	—	—	3·2	1·0	14·5	58	—	—	1·9	3·3	20·7
Deformities of limbs ..	38	—	5	1·7	3·6	34·7	7	—	—	—	0·9	0·5	25·3	45	—	5	1·5	4·1	33·2
TOTAL—DISEASES OF ORGANS OF LOCOMOTION	258	—	9	11·5	17·9	25·4	120	—	4	—	14·8	5·9	18·1	378	—	9	12·4	23·9	23·1
Diseases of Areolar Tissue or Skin.																			
Impetigo	235	—	—	10·5	12·0	18·7	55	—	—	—	6·8	1·9	12·3	290	—	—	9·5	13·8	17·5
Scabies	53	—	—	2·4	2·0	13·6	10	—	—	—	1·2	0·3	12·2	63	—	—	2·1	2·3	13·4
Dermatitis	51	—	1	2·3	4·3	30·9	25	—	1	—	3·1	1·5	21·2	76	—	1	2·5	5·8	27·7
Urticaria	19	—	—	0·8	0·4	8·4	8	—	—	—	1·0	0·3	11·5	27	—	—	0·9	0·7	9·3
Eczema	30	—	—	1·3	2·3	28·2	8	—	—	—	1·0	0·4	17·8	38	—	—	1·2	2·7	26·0
Herpes	20	—	—	0·9	0·6	10·4	10	—	—	—	1·2	0·2	6·1	30	—	—	1·0	0·7	9·0
Psoriasis	12	—	—	0·5	1·0	30·0	7	—	—	—	0·9	0·5	27·0	19	—	—	0·6	1·5	28·9
Tinea cruris	56	—	—	2·5	3·5	22·6	2	—	—	—	0·2	0·1	12·0	58	—	—	1·9	3·5	22·2

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Ingrowing toe-nail ..	19	—	—	0·8	0·8	15·4	18	—	—	—	2·2	0·7	13·3	37	—	—	1·2	1·5	14·4
Other diseases of the skin	85	—	—	3·8	5·6	24·2	34	—	1	—	4·2	1·5	16·6	119	—	—	3·9	7·2	22·0
TOTAL—DISEASES OF AREOLAR TISSUE OR SKIN.	580	—	1	25·9	32·5	20·5	177	—	2	—	21·8	7·2	14·9	757	—	1	24·8	39·7	19·2
Diseases of Urinary Organs.																			
Nephritis	11	—	—	0·5	1·0	32·8	5	2	1	1	0·6	0·7	51·6	16	2	1	0·5	1·7	38·7
Pyelitis	8	—	—	0·4	1·3	58·0	6	—	1	—	0·7	0·9	52·0	14	—	—	0·5	2·1	55·4
Cystitis	14	—	—	0·6	1·9	48·7	19	—	—	—	2·3	1·4	27·4	33	—	—	1·1	3·3	36·4
Albuminuria	6	—	—	0·3	0·4	26·3	12	—	—	—	1·5	0·4	12·8	18	—	—	0·6	0·9	17·3
Other diseases of urinary organs	25	—	—	1·1	2·2	32·9	17	—	4	—	2·1	2·3	49·1	42	—	—	1·4	4·5	39·5
TOTAL—DISEASES OF URINARY ORGANS ..	64	—	—	2·9	6·8	38·9	59	2	6	1	7·3	5·7	35·2	123	2	1	4·0	12·5	37·1
Tumours and Cysts.																			
Tumours, non-malignant	14	—	—	0·6	0·9	23·8	4	—	1	—	0·5	0·9	80·5	18	—	—	0·6	1·8	36·4
Tumours, malignant ..	2	—	—	0·1	0·4	75·5	—	1	—	—	—	0·4	—	2	1	—	0·1	0·8	145·5
Cysts	32	—	—	1·4	1·1	12·7	5	—	—	—	0·6	0·2	12·2	37	—	—	1·2	1·3	12·6
TOTAL—TUMOURS AND CYSTS	48	—	—	2·1	2·4	18·5	9	1	1	—	1·1	1·4	58·1	57	1	—	1·9	3·9	24·8
Poisons.	12	2	—	0·5	0·5	13·8	19	1	—	—	2·3	0·8	16·2	31	3	—	1·0	1·3	15·2
No appreciable disease ..	22	—	—	1·0	0·8	13·7	16	—	—	—	2·0	0·4	8·6	38	—	—	1·2	1·2	11·5
Debility	18	—	—	0·8	0·7	14·6	13	—	1	—	1·6	0·6	16·4	31	—	—	1·0	1·3	15·3
*TOTAL—ALL DISEASES	6,342	27	138	283·6	359·6	20·8	4,355	13	126	29	536·9	202·3	17·0	10,697	40	167	351·1	561·9	19·2

* Analysed in further detail in Table VII.

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TABLE XII.—NOSOLOGICAL TABLE FOR HOME, ABROAD, AND TOTAL FORCE, 1928.—*continued.*

Disease.	Home. Average strength, 22,359.						Abroad. Average strength, 8,111.							Total Force. Average strength, 30,470.					
	No. of cases.	No. of deaths.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages.		No. of cases.	No. of deaths.	No. invalided to United Kingdom.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages.		No. of cases.	No. of deaths.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages.	
					No. sick daily.	Duration of case.						No. sick daily.	Duration of case.					No. sick daily.	Duration of case.
						Days.							Days.						Days.
General Injuries.																			
Burns and scalds ..	4	—	—	0·2	0·4	37·8	6	3	1	—	0·7	0·7	44·5	10	3	—	0·3	1·1	41·8
Heatstroke, sunstroke, and heat exhaustion ..	2	—	—	0·1	0·0	7·5	27	1	—	—	3·3	1·2	15·7	29	1	—	1·0	1·2	15·1
Suffocation and strangulation	1	1	—	0·0	—	0·0	—	—	—	—	—	—	—	1	1	—	0·0	—	0·0
Drowning	1	1	—	0·0	—	0·0	4	4	—	—	0·5	—	0·0	5	5	—	0·2	—	0·0
Minor injuries	98	—	—	4·4	2·3	8·5	19	—	—	—	2·3	0·5	8·9	117	—	—	3·8	2·7	8·6
Multiple fractures ..	76	41	2	3·4	9·4	45·2	29	20	2	—	3·6	2·2	27·2	105	61	2	3·4	11·6	40·3
Multiple wounds ..	3	—	—	0·1	0·1	12·7	3	—	—	—	0·4	0·1	17·0	6	—	—	0·2	0·2	14·8
Other injuries	8	1	—	0·4	0·1	4·1	4	1	—	—	0·5	0·1	5·0	12	2	—	0·4	0·1	4·4
*TOTAL—GENERAL INJURIES	193	44	2	8·6	12·3	23·4	92	29	3	—	11·3	4·7	18·7	285	73	2	9·4	17·0	21·9
Local Injuries.																			
(i) Head and Neck:																			
Contusions and wounds..	105	—	1	4·7	3·9	13·6	54	—	—	—	6·7	1·5	10·5	159	—	1	5·2	5·4	12·5
Gunshot wounds.. ..	—	—	—	—	—	—	1	1	—	—	0·1	—	0·0	1	1	—	0·0	—	0·0
Burns and scalds ..	11	—	—	0·5	0·3	11·5	2	—	—	—	0·2	0·1	14·0	13	—	—	0·4	0·4	11·9
Fracture of skull ..	28	12	2	1·3	3·4	44·6	4	4	—	—	0·5	—	0·0	32	16	2	1·1	3·4	39·0
Concussion of brain ..	105	1	2	4·7	5·5	19·3	17	1	—	—	2·1	0·5	10·5	122	2	2	4·0	6·0	18·1
Other fractures	19	—	—	0·8	1·2	23·9	9	—	2	1	1·1	0·7	30·3	28	—	1	0·9	2·0	26·0
Other injuries	17	1	—	0·8	1·3	28·4	6	—	—	—	0·7	0·2	12·5	23	1	—	0·8	1·5	24·3
TOTAL—HEAD AND NECK	285	14	5	12·7	15·8	20·2	93	6	2	1	11·5	3·1	12·0	378	20	6	12·4	18·8	18·2

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(ii) Trunk :																			
Contusions and wounds..	45	2	—	2·0	1·6	13·0	23	1	—	—	2·8	0·7	10·7	68	3	—	2·2	2·3	12·2
Gunshot wounds.. ..	—	—	—	—	—	—	—	—	—	1	—	0·4	—	—	—	1	—	0·4	—
Fractures	8	1	—	0·4	0·6	28·1	7	—	1	—	0·9	1·3	69·1	15	1	—	0·5	1·9	47·3
Other injuries	21	—	—	0·9	0·8	13·5	14	—	—	—	1·7	0·4	9·5	35	—	—	1·1	1·1	11·9
TOTAL—TRUNK	74	3	—	3·3	3·0	14·8	44	1	1	1	5·4	2·8	23·2	118	4	1	3·9	5·8	17·9
(iii) Upper extremity:																			
Contusions and wounds..	102	—	2	4·6	4·8	17·1	41	—	—	—	5·1	1·6	14·1	143	—	2	4·7	6·3	16·2
Gunshot wounds.. ..	—	—	—	—	—	—	1	—	—	—	0·1	0·0	14·0	1	—	—	0·0	0·0	14·0
Burns and scalds ..	15	—	—	0·7	0·6	15·0	9	—	—	—	1·1	0·3	11·3	24	—	—	0·8	0·9	13·6
Fractures	134	—	1	6·0	13·6	37·2	58	—	2	—	7·2	5·6	35·3	192	—	1	6·3	19·2	36·6
Dislocations	26	—	—	1·2	1·9	26·8	10	—	—	—	1·2	0·5	19·7	36	—	—	1·2	2·4	24·9
Sprains	18	—	—	0·8	1·0	21·3	10	—	1	—	1·2	0·8	30·7	28	—	—	0·9	1·9	24·6
Other injuries	8	—	—	0·4	0·4	19·0	6	—	—	—	0·7	0·1	6·5	14	—	—	0·5	0·5	13·6
TOTAL—UPPER EXTREMITY	303	—	3	13·6	22·3	27·0	135	—	3	—	16·6	9·0	24·3	438	—	3	14·4	31·3	26·2
(iv) Total—Hand and Wrist	134	—	3	6·0	9·3	25·3	57	—	1	—	7·0	3·1	19·7	191	—	3	6·3	12·3	23·6
(v) Total—Rest of limb	169	—	—	7·6	13·1	28·4	78	—	2	—	9·6	5·9	27·7	247	—	—	8·1	19·0	28·2
(vi) Lower extremity:																			
Contusions and wounds..	188	—	—	8·4	7·7	14·9	88	—	—	—	10·8	2·3	9·7	276	—	—	9·1	10·0	13·3
Gunshot wounds.. ..	—	—	—	—	—	—	3	—	1	—	0·4	0·9	112·0	3	—	—	0·1	0·9	112·0
Burns and scalds ..	10	—	—	0·5	0·8	28·3	11	—	—	—	1·4	0·4	13·5	21	—	—	0·7	1·2	20·5
Fractures	89	—	9	4·0	26·6	109·3	20	—	1	1	2·5	4·2	76·6	109	—	10	3·6	30·8	103·3
Dislocations	9	—	—	0·4	0·3	11·8	2	—	—	—	0·2	0·1	20·5	11	—	—	0·4	0·4	13·4
Sprains	238	—	—	10·6	9·8	15·0	150	—	1	—	18·5	4·3	10·4	388	—	—	12·7	14·0	13·2
Other injuries	229	—	—	10·2	9·1	14·6	152	—	—	—	18·7	5·1	12·4	381	—	—	12·5	14·3	13·7
TOTAL—LOWER EXTREMITY	763	—	9	34·1	54·2	26·0	426	—	3	1	52·5	17·4	14·9	1,189	—	10	39·0	71·6	22·0

* Analysed in further detail in Table VII.

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TABLE XII.—NOSOLOGICAL TABLE FOR HOME, ABROAD, AND TOTAL FORCE, 1928.—*continued.*

Disease.	Home. Average strength, 22,359.						Abroad. Average strength, 8,111.							Total Force. Average strength, 30,470.					
	No. of cases.	No. of deaths.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages.		No. of cases.	No. of deaths.	No. invalided to United Kingdom.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages.		No. of cases.	No. of deaths.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages.	
					No. sick daily.	Duration of case.						No. sick daily.	Duration of case.					No. sick daily.	Duration of case.
						Days.							Days.						Days.
(vii) TOTAL—FOOT AND ANKLE	293	—	2	13·1	10·3	12·9	172	—	—	—	21·2	4·8	10·2	465	—	2	15·3	15·1	11·9
(viii) TOTAL—KNEE ..	279	—	—	12·5	13·9	18·2	171	—	1	—	21·1	6·3	13·5	450	—	—	14·8	20·2	16·4
(ix) TOTAL—REST OF LIMB..	191	—	7	8·5	30·0	57·5	83	—	2	1	10·2	6·3	27·7	274	—	8	9·0	36·3	48·5
*TOTAL—ALL LOCAL INJURIES	1,425	17	17	63·7	95·3	24·5	698	7	9	3	86·1	32·2	16·9	2,123	24	20	69·7	127·5	22·0
*TOTAL—ALL INJURIES ..	1,618	61	19	72·4	107·6	24·3	790	36	12	3	97·4	36·9	17·1	2,408	97	22	79·0	144·5	22·0
*TOTAL—ALL DISEASES ..	6,342	27	138	283·6	359·6	20·8	4,355	13	126	29	536·9	202·3	17·0	10,697	40	167	351·1	561·9	19·2
*TOTAL—ALL DISABILITIES	7,960	88	157	356·0	467·3	21·5	5,145	49	138	32	634·3	239·2	17·0	13,105	137	189	430·1	706·4	19·7

* Analysed in further detail in Table VII.

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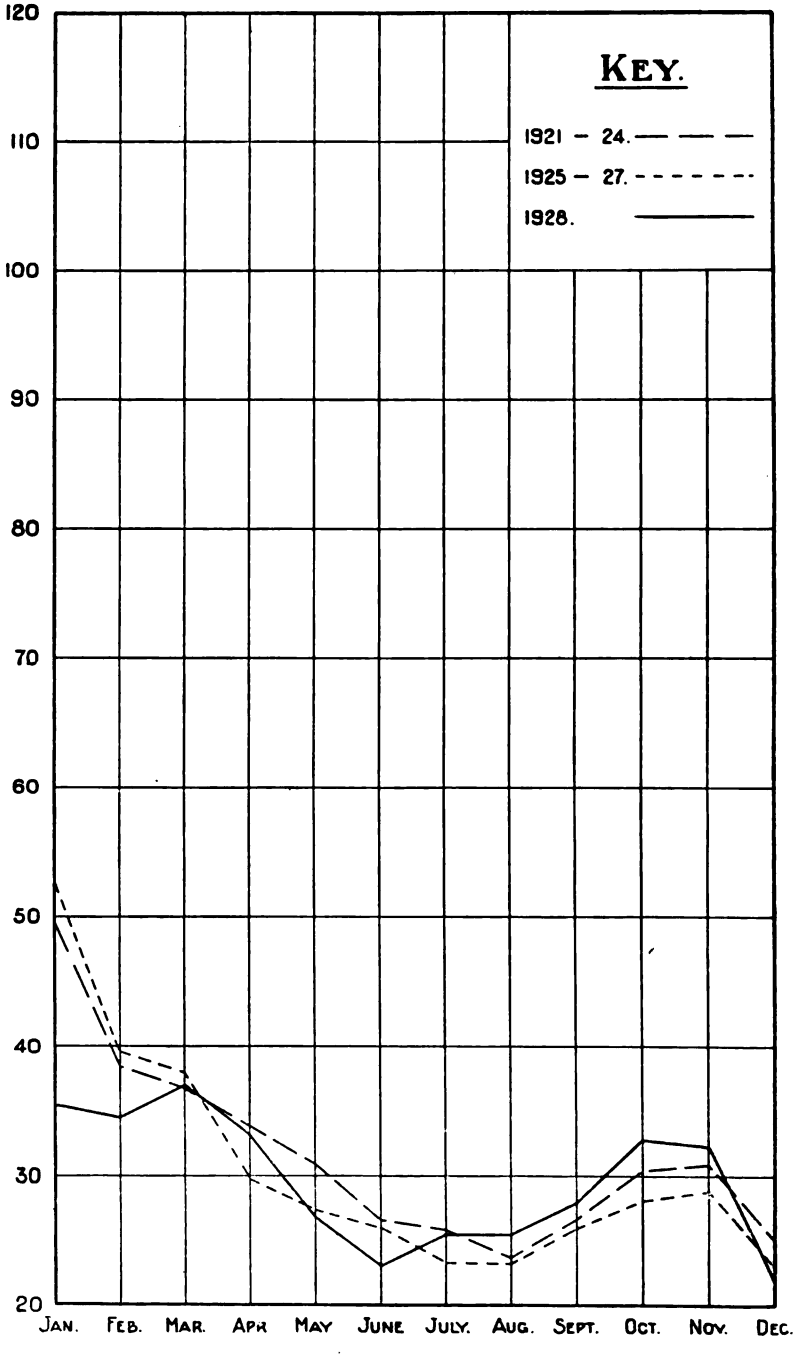
CHART I. SICKNESS AT HOME, 1928.

MONTHLY CASE INCIDENCE PER 1,000 OF STRENGTH.



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CHAPTER II.—THE HEALTH OF THE ROYAL AIR FORCE AT HOME DURING 1928.

General.

38. The total number of cases of sickness at home, excluding the Fleet Air Arm, during 1928 was 11,498, of which 3,636 were cases of less than 48 hours duration. Calculated on the average strength of the force at home, 21,981, the sickness incidence, including 48-hour cases, was 523·1 per 1,000, and, excluding 48-hour cases, 357·7 per 1,000, compared with 604·4 and 366·8 in 1927 and averages of 670·1 and 366·2 for the period 1925–7 and 857·5 and 378·6 for the period 1921–4. The number of sick daily increased to 21·6 per 1,000 from averages of 19·7 and 20·5 over the two previous three-yearly periods while the number sick in hospital or sick quarters, *i.e.*, cases of over 48 hours duration, rose to 21·0 from an average of 18·6 in both the previous periods. The death incidence rose slightly in 1928 to 3·8 per 1,000 compared with averages over the periods defined above of 3·3 and 3·2 respectively, but the final invaliding rate fell to 7·1 from 7·7 in 1927 and averages of 8·9 and 13·6 over the two previous periods.

39. The total sickness at home is analysed in table XIII, page 37, to show by age groups the incidence of injury and of certain diseases which were responsible for most of the medical non-effectiveness during 1928. Officers and cadets being numerically small are not divided into age groups and the incidence of sickness is shown for this group of personnel as a whole. As in 1927 and 1926 the youngest age group of airmen shows the highest disease and total sickness incidence. The group aged 20 and 21 years shows the highest incidence of injury with the officer and cadet group second ; in 1927 the latter group showed the highest incidence, followed by the two groups aged 18 and 19 and 20 and 21 ; these two groups showed practically the same incidence. In 1928 as in 1927 the incidence of venereal disease is most marked in the group aged 26 and 27 and lowest in the groups under 19 years. The youngest age group of airmen appears, as in previous years, to be most susceptible to diseases of the digestive system.

40. Table XIV, page 38, gives a further analysis of the sickness figures shown in table XIII by stations which maintained an average strength of 500 or over during the year. Comparing those stations which appeared in the analysis in both 1927 and 1928, Halton showed the highest sickness incidence with Cranwell and Flower Down next and Eastchurch the lowest in 1928, while

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in 1927 the highest incidence was found at Cranwell with Halton and Flower Down next and Eastchurch the lowest. The figures in table XIV confirm those of table XIII in that Halton is the main station where the younger age groups are undergoing training.

41. Chart I, page 34, shows the monthly incidence of sickness at home during 1928 and the averages of the two previous periods 1921–4 and 1925–7.

Diseases calling for Special Mention.

42. *Influenza.*—The incidence per 1,000 fell in 1928 to 13·1 from 36·5 in 1927, but the average duration in days per case rose from 8·1 to 10·5.

43. *Malaria.*—The figures for malaria during the last few years show that any marked variation in the incidence of primary malaria abroad is followed by a corresponding variation in the incidence of recurrent cases at home.

44. *Acute rheumatism.*—Eighty cases of acute rheumatism—an incidence of 3·6 per 1,000 compared with nineteen cases, an incidence of 0·9 per 1,000, in 1927—were reported during the year 1928. Of these eighty cases 41 occurred at Halton, almost entirely among aircraft apprentices (under 18 years of age), and the remaining cases—seven at Flower Down, six at Cranwell, five at Uxbridge and the rest scattered through the home commands—were reported mainly from the lowest age group of airmen.

45. *Upper air passage infections.*—There was little change in the figures for infections of the upper air passages from those of 1927. The respective incidence and duration per case were 70·6 and 8·4 days in 1927 and 69·4 and 8·6 days in 1928.

46. *Diseases of the heart.*—Sixty-five cases of diseases of the heart, 51 of which were " disordered action," were recorded in 1928 compared with 46, of which 27 were disordered action of the heart, in 1927—an incidence of 2·9 per 1,000 compared with 2·2 in 1927.

47.—*Typhoid fever.*—Four cases, which are referred to in chapter III, occurred at home.

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TABLE XIII.—INCIDENCE OF CERTAIN DISEASES AT HOME ANALYSED BY AGE GROUPS.

Age last birthday.	Average strength.	Case incidence per 1,000 of strength.								
		Influenza.	Upper air passage infections.	Venereal diseases.	Respiratory diseases.	Digestive diseases.	All other diseases.	All diseases.	All injuries.	All disabilities.
Airmen—										
Under 18 ..	1,838	8·2	205·1	0·5	13·1	78·9	285·1	590·9	54·9	645·8
18 and 19 ..	3,204	11·5	88·3	4·1	17·5	32·1	167·3	320·8	74·6	395·4
20 and 21 ..	3,252	16·9	71·0	10·8	12·9	33·5	126·7	271·8	97·5	369·3
22 and 23 ..	2,324	11·2	65·0	24·1	9·9	37·4	130·0	277·6	83·0	360·6
24 and 25 ..	2,624	11·8	53·7	23·2	7·2	33·5	120·4	250·0	63·6	313·6
26 and 27 ..	2,506	14·0	45·9	27·9	7·2	31·5	122·9	249·4	73·4	322·8
28 and 29 ..	1,431	11·9	39·8	18·9	11·2	41·9	114·6	238·3	62·2	300·5
30 to 34 ..	1,652	11·5	29·7	9·7	17·6	40·0	90·2	198·6	44·2	242·7
35 to 39 ..	684	8·8	26·3	5·8	4·4	30·7	89·2	165·2	36·5	201·7
40 and over ..	405	2·5	17·3	7·4	14·8	17·3	130·9	190·1	12·3	202·5
Total, airmen ..	19,920	12·1	71·7	14·4	11·8	38·4	141·8	290·3	69·9	360·2
Officers and cadets ..	2,439	20·5	50·8	6·6	12·7	35·3	103·3	229·2	92·2	321·4
Total at home..	22,359	13·1	69·4	13·5	11·9	38·1	137·6	283·6	72·4	356·0

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TABLE XIV.—SICKNESS AT PRINCIPAL STATIONS AT HOME.

Station.	Average strength.	Case incidence per 1,000 of strength.								
		Influenza.	Upper air passage infections.	Venereal diseases.	Respiratory diseases.	Digestive diseases.	All other diseases.	All diseases.	All injuries.	All disabilities.
Andover ..	514	5·8	62·3	13·6	11·7	17·5	68·1	179·0	60·3	239·3
Calshot	522	3·8	32·6	5·7	7·7	40·2	113·0	203·1	95·8	298·9
Cranwell ..	736	8·2	69·3	19·0	4·1	58·4	176·6	335·6	114·1	449·7
Digby	494	30·4	70·9	14·2	8·1	44·5	184·2	352·2	125·5	477·7
Eastchurch ..	600	5·0	48·3	8·3	6·7	20·0	56·7	145·0	40·0	185·0
Flower Down ..	1,092	21·1	140·1	9·2	19·2	48·5	166·7	404·8	44·9	449·6
Gosport ..	479	4·2	39·7	10·4	2·1	18·8	50·1	125·3	41·8	167·0
Halton	3,530	6·2	138·5	5·1	13·3	59·8	216·1	439·1	53·3	492·4
Henlow	1,533	24·8	47·0	16·3	18·3	39·8	127·2	273·3	85·4	358·8
Manston ..	1,091	9·2	77·9	17·4	12·8	26·6	125·6	269·5	58·7	328·1
Netheravon ..	584	15·4	41·1	17·1	15·4	13·7	114·7	217·5	113·0	330·5
Sealand ..	489	22·5	53·2	14·3	6·1	36·8	96·1	229·0	71·6	300·6
Uxbridge ..	1,876	13·3	50·1	12·8	11·2	33·6	159·9	280·9	44·2	325·2
All other stations	8,819	13·9	48·4	16·8	11·6	33·1	114·9	238·7	82·9	320·6
Total ..	22,359	13·1	69·4	13·5	11·9	38·1	137·6	283·6	72·4	356·0

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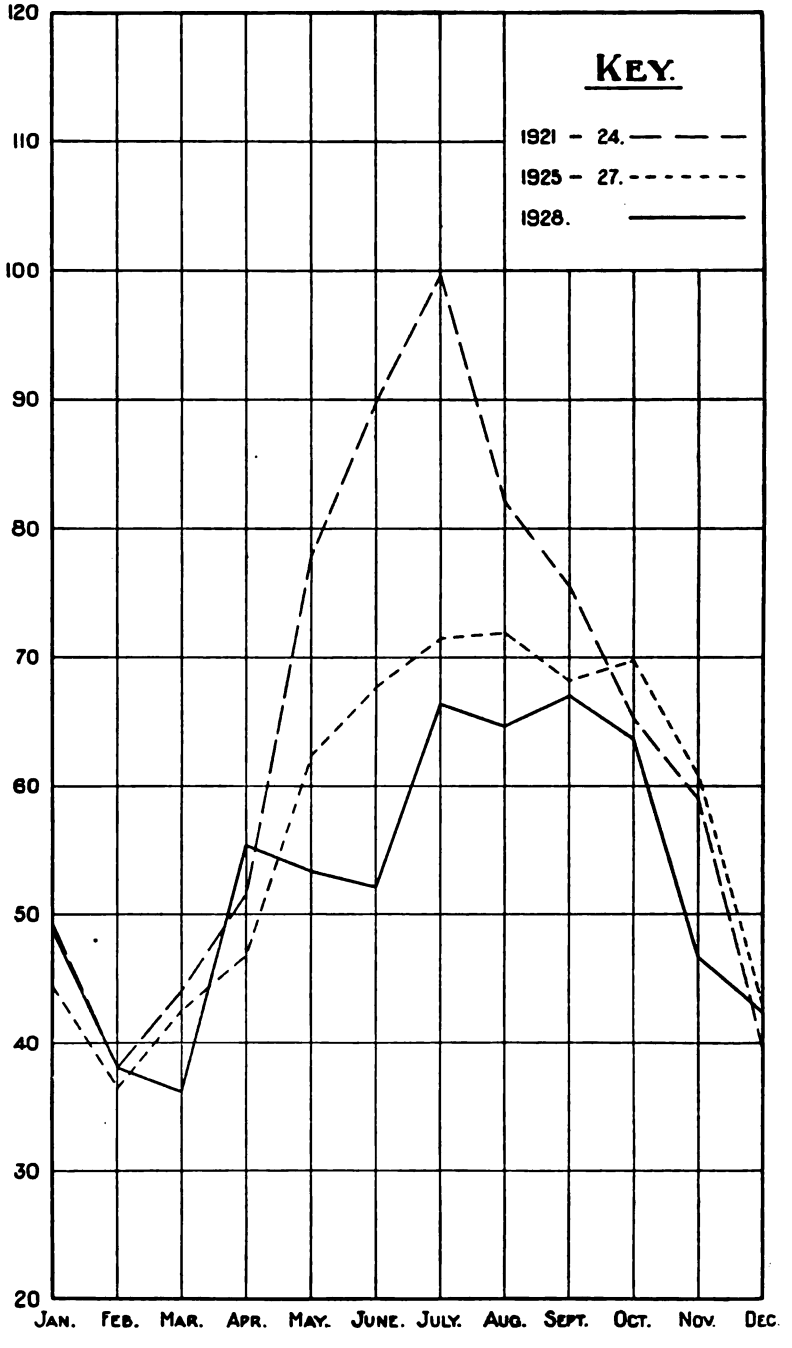
Chart II. Sickness Abroad, 1928.

Monthly Case Incidence per 1,000 of Strength.



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CHAPTER III.—THE HEALTH OF THE ROYAL AIR FORCE ABROAD DURING 1928.

General.

48. Sickness in the force abroad, including the Far East stations, is analysed in table I, page viii. The average strength abroad, excluding the Fleet Air Arm, during 1928 was 7,677 and the total number of cases of sickness 8,919, an incidence per 1,000 of 1161·8 compared with 1347·5 in 1927 and averages over the two previous periods of 1279·7 and 1804·5 respectively. The number of sick daily fell to 32·2 in 1928 from 36·7 in 1927, and the average number of days sickness per head from 13·4 in 1927 to 11·8 in 1928. The death incidence abroad rose to 6·0 in 1928 from 5·6 in 1927 but remained below the respective averages of 6·8 and 7·3 for the two previous periods. The rate of invaliding to the United Kingdom fell markedly from 26·6 in 1927 and averages of 23·4 and 22·4 for the previous periods to 17·5 in 1928.

49. Table XV, page 44, analyses by age groups the incidence of injury and of certain diseases responsible for the bulk of medical non-effectiveness abroad. The highest disease incidence occurred in the age group 28 and 29 and the highest injury incidence in the officer group.

50. Table XVI, page 45, gives an analysis of dysentery, malaria and sandfly fever at the larger stations in each command abroad. In 1927 these three diseases accounted for 57·7 per cent. of the total diseases at Karachi, 33·3 per cent. at Hinaidi and 27·8 per cent. at Abu Sueir; in 1928 the corresponding percentages fell to 43·7, 18·7 and 25·4 respectively. The incidence of dysentery, malaria and sandfly fever collectively fell at all stations which were analysed in both years, with the exception of Malta where it rose from 91·8 per 1,000 in 1927 to 122·8 in 1928.

51. Table XVII, page 46, carries the analysis in table XVI into further detail both as regards the locality and the disease itself. All stations abroad are included, cases of dysentery are shown by type of infection and dysentery and malaria are subdivided into primary and recurrent cases. In the Mediterranean Littoral the figures for fresh cases of dysentery reversed the type frequency of 1927. In 1927 of seventeen new cases five were bacillary and twelve protozoal, while in 1928 of sixteen new cases fourteen were bacillary and two protozoal. In India in 1928, as in 1927, the bacillary type was the more frequent, while in Iraq, where in 1927 five primary cases of the bacillary and sixteen of the protozoal type were reported, ten primary bacillary were

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notified against six protozoal. As has already been noted in chapter I, a marked reduction in primary malaria was effected in all areas. With average strengths of 1,976 and 1,915 the number of cases in India fell from 259 in 1927 to 83 in 1928, and in Iraq from 75 to 33 on respective average strengths of 2,739 and 2,412. In the Mediterranean Littoral primary cases of malaria decreased from 157 in 1927 to 58 in 1928. In the Mediterranean Littoral in 1927 recurrences were slightly lower than primary cases; in 1928 they were twice as numerous; in India in 1927 they were slightly higher, and in 1928 they were two and a half times as frequent; in Iraq in 1927 they were twice as numerous, while in 1928 the number of primary cases and the number of recurrences were practically the same. The high proportion of recurrences in India and the Mediterranean Littoral, in spite of the lowered primary rates in these commands, is probably due to the normal movement of airmen from Iraq where 308 primary cases occurred in 1926. The number of cases of sandfly fever increased from 149 to 165 in the Littoral and from 85 to 98 in India, while in Iraq it fell from 428 to 233 in 1928 compared with 1927. In the Mediterranean Littoral, Amman showed the highest incidence of sandfly fever and malaria. In India, malaria and dysentery were most frequent at Kohat and sandfly fever at Peshawar. In Iraq, Basrah showed the highest incidence of malaria and sandfly fever, and Hinaidi that of dysentery.

52. Table XVIII, page 47, analyses cases of dysentery, malaria and sandfly fever by months, and in addition shows the incidence of each type by commands for 1928 compared with averages of the two previous periods. There is no outstanding feature in the monthly incidence of dysentery except its comparative absence in all commands during the first three months of the year. Primary malaria in the Mediterranean Littoral reaches its height from August to October, in India from September to November, and in Iraq about June, with in some years a second peak about November. There is little, if any, sandfly fever in any of the commands during the first three months of the year; Iraq commences to be attacked in April and shows its highest figures in May and June; India and the Littoral show no great incidence until late June and July, and usually, few cases are found in any command after the end of September.

Other Diseases calling for Special Mention.

53. *Enteric group.*—(i) *Typhoid fever.*—Thirty-seven cases, thirty-three abroad and four at home, were reported in 1928 compared with 36 in each of the two preceding years. In sixteen of the cases B. typhosus was isolated, in twelve the diagnosis was made on the agglutination test, and nine presented clinical symptoms only and were unconfirmed by laboratory tests. Of the sixteen cases referred to above twelve were reported from Iraq, two from India and two at home; there were four deaths

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in this group, three in Iraq and one at home. Of the second group of diagnoses eight cases occurred in Iraq, two in India and two at home, while of the nine clinical cases seven were reported from Iraq, one from Egypt and one from the Far East. There were no deaths in either of the last two groups.

(ii) *Paratyphoid A.*—Two cases, both in Iraq, were reported in one of which the diagnosis was based on the aggultination test and in the other on clinical evidence only. Both cases recovered.

(iii) *Paratyphoid B.*—Nine cases in all of which the diagnosis was made on bacteriological findings occurred during 1928, five in Iraq, two in Egypt, one *en route* to the United Kingdom from Iraq, and one at home. All cases recovered. Of the five deaths shown in table XII from the enteric group one occurred in a case reported in 1927.

54. *Enteritis and gastro-enteritis.*—Three hundred and eighty-four cases, an incidence of 47·3 per 1,000, were reported abroad in 1928 compared with 320, an incidence of 37·2, in 1927. There were no deaths and one case was invalided to the United Kingdom.

55. *Influenza.*—The incidence abroad fell from 22·1 in 1927 to 14·3 in 1928.

56. *Upper air passage infections.*—The incidence of all upper air passage infections abroad rose to 80·1 per 1,000 in 1928 from 71·2 per 1,000 in 1927 and compared with an incidence of 69·4 at home in 1928.

57. *Psychoneurosis.*—The incidence of cases fell to 3·8 per 1,000 in 1928 from 5·9 in 1927; seventeen cases were invalided to the United Kingdom during 1928 against thirty in 1927.

58. *Heat stroke and heat exhaustion.*—Twenty-seven cases were reported during 1928 compared with nine in 1927. Three of the cases showed symptoms of heatstroke and one died. There was one death from this cause in 1927.

59. Chart II, page 40, shows the monthly incidence of sickness abroad during 1928 and the averages of the two previous periods.

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TABLE XV.—INCIDENCE OF CERTAIN DISEASES ABROAD, ANALYSED BY AGE GROUPS.

Age last birthday.	Average strength.	Case incidence per 1,000 of strength.										
		Dysentery.	Malaria.	Sandfly fever.	Upper air passage infections.	Venereal diseases.	Respiratory diseases.	Digestive diseases.	All other diseases.	All diseases.	All injuries.	Total disabilities.
Airmen—												
18 and 19	68	*	*	*	*	*	*	*	*	*	*	*
20 and 21	953	7·3	35·7	81·8	76·6	25·2	9·4	36·7	243·4	516·3	113·3	629·6
22 and 23	2,043	8·3	70·0	66·1	97·4	29·9	14·2	43·1	221·2	550·2	95·0	645·1
24 and 25	1,416	9·2	85·5	69·9	81·9	40·3	19·8	33·9	236·6	577·0	111·6	688·6
26 and 27	1,047	8·6	66·9	52·5	73·5	38·2	22·0	49·7	245·5	556·8	82·1	639·0
28 and 29	543	1·8	99·4	71·8	71·8	51·6	23·9	55·2	268·9	644·6	106·8	751·4
30 to 34	712	8·4	40·7	43·5	50·6	39·3	19·7	54·8	175·6	432·6	61·8	494·4
35 to 39	264	11·4	75·8	34·1	72·0	26·5	22·7	53·0	189·4	484·8	94·7	579·5
40 and over	121	8·3	90·9	*33·1	74·4	—	8·3	66·1	223·1	504·1	33·1	537·2
Total, airmen	7,167	8·0	67·7	63·3	79·8	34·2	17·3	44·4	228·1	542·8	94·7	637·5
Total, officers	944	14·8	38·1	54·0	82·6	9·5	22·2	57·2	214·0	492·6	117·6	610·2
Total, abroad	8,111	8·8	64·2	62·3	80·1	31·3	17·9	45·9	226·5	536·9	97·4	634·3

* Not calculated.

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TABLE XVI.—SICKNESS, EXCLUDING INJURY, AT PRINCIPAL STATIONS ABROAD.

Station.	Average strength	Number of cases.						Percentage of total number of cases of disease at stations.					Case incidence per 1,000 of strength.		
		Dysentery.	Malaria.	Sandfly fever.	Total: dysentery, malaria and sandfly fever.	All other diseases.	Total all diseases.	Dysentery.	Malaria.	Sandfly fever.	Total: dysentery, malaria and sandfly fever.	All other diseases.	Dysentery, malaria and sandfly fever.	All other diseases.	All diseases.
Egypt.															
Aboukir ..	745	4	13	9	26	179	205	2·0	6·3	4·4	12·7	87·3	34·9	240·3	275·2
Abu Sueir ..	448	—	26	6	32	94	126	—	20·6	4·8	25·4	74·6	71·4	209·8	281·2
Cairo	563	2	13	9	24	274	298	0·7	4·4	3·0	8·1	91·9	42·6	486·7	529·3
Iraq.															
Hinaidi ..	1,482	15	16	144	175	763	938	1·6	1·7	15·4	18·7	81·3	118·1	514·8	632·9
India.															
Karachi ..	731	4	140	18	162	209	371	1·1	37·7	4·9	43·7	56·3	221·6	285·9	507·5
Mediterranean.															
Malta	342	3	—	39	42	235	277	1·1	—	14·1	15·2	84·8	122·8	687·1	809·9

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TABLE XVII.—DYSENTERY, MALARIA AND SANDFLY FEVER AT STATIONS ABROAD.

Station.	Average strength.	No. of cases.										
		Dysentery.								Malaria.		Sandfly fever.
		Clinical		Bacillary		Protozoal		All types				
		Primary.	All.	Primary.	All.	Primary.	All.	Primary.	All.	Primary.	All.	
Mediterranean Littoral.												
Aboukir ..	745	—	—	4	4	—	—	4	4	3	13	9
Abu Sueir ..	448	—	—	—	—	—	—	—	—	12	26	6
Aden ..	212	1	1	—	—	—	—	1	1	5	7	—
Amman ..	264	—	—	1	1	1	2	2	3	11	61	63
Cairo and Heliopolis	563	—	—	2	2	—	—	2	2	3	13	9
Helouan ..	157	3	3	2	2	—	—	5	5	4	4	10
Khartoum ..	162	—	—	4	4	—	—	4	4	8	13	7
Malta ..	342	2	2	—	—	1	1	3	3	—	—	39
Ramleh ..	101	—	—	1	1	—	—	1	1	—	12	4
Various small stations and drafts *en route* ..	290	1	1	—	—	—	1	1	2	12	26	18
Total ..	3,284	7	7	14	14	2	4	23	25	58	175	165
India.												
Ambala ..	135	—	—	2	2	—	—	2	2	5	7	8
Karachi ..	731	—	—	3	3	1	1	4	4	32	140	18
Kohat ..	127	—	—	5	5	—	—	5	5	19	48	21
Lahore ..	142	—	—	3	4	—	—	3	4	3	15	5
Lower Topa..	97	—	—	1	1	—	—	1	1	4	14	3
Peshawar ..	151	—	—	2	2	—	—	2	2	6	19	29
Quetta ..	195	—	—	3	3	—	—	3	3	9	11	1
Risalpur ..	267	—	—	—	—	1	2	1	2	4	22	13
Various small stations ..	70	—	—	—	—	—	—	—	—	1	2	—
Total ..	1,915	—	—	19	20	2	3	21	23	83	278	98
Iraq.												
Baghdad ..	235	—	—	1	1	1	1	2	2	1	4	20
Basrah and Margil ..	173	—	—	—	—	1	1	1	1	18	30	30
Hinaidi and Kirkuk ..	1,482	1	1	9	9	4	5	14	15	8	16	144
Mosul ..	250	1	1	—	1	—	—	1	2	5	9	25
Shaibah ..	161	—	—	—	—	—	—	—	—	—	4	11
Ur	111	1	1	—	—	—	—	1	1	1	2	3
Total ..	2,412	3	3	10	11	6	7	19	21	33	65	233
Miscellaneous units abroad	66	—	—	—	—	—	—	—	—	2	2	—
Fleet Air Arm abroad ..	434	1	1	—	—	1	1	2	2	1	1	9
TOTAL all units abroad ..	8,111	11	11	43	45	11	15	65	71	177	521	505

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TABLE XVIII.—DYSENTERY, MALARIA, AND SANDFLY FEVER ABROAD—MONTHLY CASE INCIDENCE.

Month.	Dysentery.						Malaria.						Sandfly fever.		
	Mediterranean Littoral.		India.		Iraq.		Mediterranean Littoral.		India.		Iraq.		Mediterranean Littoral.	India.	Iraq.
	Primary cases.	All cases.	Primary cases.	All cases.	Primary cases.	All cases.	Primary cases.	All cases.	Primary cases.	All cases.	Primary cases.	All cases.			
January	—	1	1	2	—	—	6	9	5	18	—	4	1	—	—
February	—	—	—	—	—	—	3	17	3	14	—	3	—	1	—
March	—	—	—	1	1	1	1	12	4	19	6	10	1	3	—
April	—	—	3	3	3	3	5	20	2	11	1	4	3	5	23
May	3	3	1	1	—	—	—	18	7	16	2	4	6	8	43
June	—	1	1	1	2	3	1	13	4	22	8	14	24	12	42
July	3	3	1	1	1	1	1	12	9	37	4	6	30	20	31
August	3	3	2	2	—	—	10	17	6	36	2	4	52	15	36
September ..	5	5	5	5	3	3	11	17	19	42	1	2	26	12	40
October	2	2	2	2	5	5	11	19	11	24	4	7	15	15	16
November	2	2	4	4	3	4	7	11	10	22	3	5	6	3	2
December	5	5	1	1	1	1	2	10	3	17	2	2	1	4	—
1928 Total ..	23	25	21	23	19	21	58	175	83	278	33	65	165	98	233
Case incidence per 1,000 of strength															
1928	7·0	7·6	11·0	12·0	7·9	8·7	17·7	53·3	43·3	145·2	13·7	26·9	50·2	51·2	96·6
1925–1927 ..	*5·7*	*7·2*	*10·5*	*12·9*	*28·4*	*32·4*	*23·8*	*48·0*	*131·4*	*283·7*	*56·0*	*126·2*	*26·4*	*50·2*	*150·6*
1921–1924 ..	*11·0*	*13·8*	*12·6*	*22·7*	*30·1*	*37·9*	*10·6*	*25·5*	*107·8*	*240·9*	*55·9*	*121·3*	*72·8*	*70·4*	*297·0*

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CHAPTER IV.—MISCELLANEOUS.

The Central Medical Establishment.

60. In January, 1928, the two medical establishments previously known as the Central Medical Board and the Medical Officers School of Instruction and Medical Research Laboratory were merged into the R.A.F. Central Medical Establishment. During the year, 2,816 medical examinations were carried out by the Central Medical Establishment compared with 2,374 in 1927 and 2,227 in 1926. Of the total 2,816, 374 were examinations carried out on civilian pilots, 160 were annual medical examinations of R.A.F. officers not borne on the strength of any station at which a medical officer was posted for duty, and 2,282 were examinations as detailed in the following paragraph.

61. One thousand and forty-four examinations were in respect of new entrants to the Royal Air Force—480 short service commissions, 109 permanent commissions, 96 cadets, secondments from other services (22 from the Royal Navy for the Fleet Air Arm and twelve others), airman pilots 128, Reserve of Officers and Auxiliary Air Force 148 and 23 respectively, and 26 other candidates (Princess Mary's R.A.F. Nursing Service and preliminary examinations for cadetships). One thousand and eleven examinations were carried out on serving personnel to determine their fitness for duty in their respective branches, 24 examinations were held on pensioners and 203 additional examinations (re-examinations after temporary rejection) were held on personnel of the classes enumerated above.

62. Among the 1,044 new entrants to their respective branches, whether on permanent or short service commissions, as cadets or airman pilots or on secondment, 268 were finally and 77 temporarily rejected, and the causes of rejection are analysed in table XXI, page 64. Defective vision, as in previous years, again proved the most frequent cause of rejection—37 per cent. in 1928, 33 per cent. in 1927, 41 per cent. in 1926 and 38 per cent. in 1925.

63. Seven hundred and eighteen of the 1,044 examinations referred to in the previous paragraphs were held on candidates for flying duties, of whom 460 were accepted, and the results of their examinations are analysed in table XIX, page 62. Sixty-four per cent. of the total candidates were accepted compared with 53 per cent. in 1927 and 1926; and comparing the corresponding classes in 1927 and 1928 the latter year shows an increased percentage acceptance for flying duties in each class. The average results of the physical efficiency tests and measurements in each class of the 460 candidates accepted for flying duties are analysed in table XX, page 63.

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64. During the year short courses of instruction in the routine procedure of medical examination in the Royal Air Force were given to :—

6 medical officers from the Royal Navy.
1 medical officer from the Royal Australian Navy.
1 officer from the Royal Canadian Medical Corps.
1 officer from the Army Medical Service of the Irish Free State.

In addition, twenty newly-joined medical officers attended from the Medical Training Depôt for instruction in the principles of board procedure. Day visits were also paid by several medical officers from foreign states who were interested in the British methods of examination.

65. A beginning was made in 1928 for an investigation into the effects of fast flying and intensive aerobatics. A special apparatus has been built at the Royal Aircraft Establishment for the investigation of the effects of fast horizontal turns, and it is hoped to use this in conjunction with an apparatus suggested by the Director of Scientific Research for studying the effects of steep dives, etc. Upon the first apparatus a certain number of successful pilots have been tested in respect of the effects upon pulse rate, blood pressure and ocular muscle balance. When a sufficient number have been tested it may be possible to devise, if necessary, a simpler test capable of more general application.

66. During the year experiments have been carried out for devising better means of ventilation and heating, particularly of civil aircraft, although it is believed that the work will be of value for R.A.F. aircraft.

Medical Training Depôt.

67. In January, 1928, the title of this establishment, which was previously known as the Hospital Orderlies Training Depôt, was changed to that of Medical Training Depôt ; its purpose and syllabus have already been described in the report for 1927.

68. During 1928, 35 airman recruits were trained and remustered as hospital orderlies (unclassified), and twenty newly-joined medical officers completed an eight weeks course of instruction. Six airmen of the medical branch were trained and qualified as X-Ray attendants, and 365 sat for various trade tests for remustering, reclassification and promotion. Of these 365, 297 or 81 per cent. passed their examinations, and of the 68 failures 39 were candidates undergoing trade tests for reclassification. As is to be expected, the highest percentage of successful candidates occurred among those whose training had been carried out in areas where R.A.F. hospitals are located.

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Physical Efficiency of Serving Officers and Airman Pilots of the Royal Air Force.

69. Three thousand, three hundred and fifty-five cards recording the results of standard tests at the annual medical examination of all officers and airman pilots were received during the year, i.e., 2,100 for officers of the general duties branch liable to full flying duties, 322 for officers of the same branch who, for reasons of age or rank, are not required to fly although many do so voluntarily, 703 for officers of the ancillary services and 230 for airman pilots. The number of cards received does not tally exactly with the total strength of officers and airman pilots as a certain number of both classes are missed each year owing to their being patients in hospital or unavoidably prevented from being examined.

70. The physical assessment of all officers at home and abroad since 1922 is given by years in table XXII, page 65. Of the 2,100 officers examined 1,847 were found to be fit for full flying duties—88 per cent.—the same percentage as in 1927, and 253 unfit. In assessing these officers the number found to be temporarily unfit is included in the total unfit figure and of the total thus shown as unfit for full flying duties it should be borne in mind that many are fit for limited flying duties. Two hundred and twenty-two out of a total of 230 airman pilots examined were found fit for full flying duties—a very satisfactory percentage of nearly 97.

71. Table XXIII, page 66, analyses those standard tests at the annual examination which are definitely negative or positive, and the percentage of negative and positive results in each test is shown for the officers found fit and those found unfit, for the airman pilots as a whole, and for the total examined. This analysis is made with the intention of correlating the final assessment with the results of the separate tests.

72. The average results of those further tests which are capable of numerical expression, among the 1,847 officers and 222 airman pilots who were classified as fit for full flying duties, are analysed in table XXIV, page 68. The purpose of this table is a comparison of the age groups of flying personnel. Test for test the officers' results are on the average a little better throughout than those of the airman pilots, and taking each test by age group, it was found that the average breath holding was highest in the officer group under 25 years (80·3 seconds), the maximum expiratory force was recorded in the officer group over 31 years (164·2 mm. Hg.), the best result in the fatigue test was shown by the officer groups under 25 and 25 to 30 years (64·2 seconds), the quickest return to normal of the pulse after graduated exercise occurred among airman pilots 31 years and over (21·8 seconds), and the lowest pulse pressure (44·3 mm. Hg.) was recorded in the officer group 31 years and over. It should be

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noted, however, that the group of airman pilots showing the quickest return to normal showed high sitting and standing pulse rates.

73. The causes of the unfitness of the 253 officers of the general duties branch referred to in para. 70 are shown in table XXV, page 70. In 1928 the chief reason for unfitness was surgical, closely followed by medical and defective vision.

74. Of the 322 officers of the general duties branch who were not called upon to fly, 148 (46 per cent.) were considered to be fit for full flying duties—146 at home and abroad and two at home only; 29 for limited flying duties—25 at home or abroad and four at home only; 32 as combatant passengers—31 at home or abroad and one at home only; 100 as non-combatant passengers—78 at home or abroad and 22 at home only; two were temporarily fit for ground duties only; one was temporarily unfit for any form of duty; eight were permanently unfit for any form of flying duty and fit for ground duty at home only; while two were permanently unfit for any form of flying. In the ancillary services 658 out of 703 were found to be fit for the duties of their branch; thirteen were fit for flying duties—twelve full and one limited; 23 were fit for duties of their branch at home only; two were temporarily and one permanently unfit for any form of flying duty but fit for ground duty at home or abroad; five were permanently unfit for any form of flying duty and fit for ground duty at home only; and one was temporarily unfit for any form of duty.

Medical Examination of Recruits.

75. The London Recruiting Depôt was open during the whole of the year 1928, and in addition a certain number of recruits were enlisted at R.A.F. stations. In the provinces an average of eighty civilian medical practitioners per month were employed in carrying out preliminary examinations and the total number of applicants examined by them was 3,932 of whom 1,906 were accepted. Of these 1,906 applicants accepted by civilian medical practitioners 1,473 were found fit on their final presentation at the London depôt. In all, 3,499 applicants were examined at the London depôt of whom 1,868 were accepted as medically fit and 1,766 were finally enlisted. At Halton and Uxbridge 1,098 aircraft apprentices (under 18 years of age) were also enlisted, making a total intake into the Royal Air Force of 2,864.

76. The principal causes of rejection by civilian medical practitioners at the preliminary examinations were in order of frequency—loss or decay of many teeth, diseases of the heart, poor physique, diseases of the ears, deformities of the feet, defects of vision, and diseases of the lungs; while at the London depôt on final examination, loss or decay of many teeth, diseases of the

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heart, poor physique, deformities of the feet, diseases of the lungs, diseases of the ears, and defects of vision, constituted the commonest causes of rejection. Of the 1,868 accepted recruits at the depôt 243 were found to have never been vaccinated—13 per cent. compared with 19 per cent. in 1927.

77. Table XXX, page 73, analyses the causes of rejection at the final examination. The first seven causes of rejection have been the same during the last five years and " loss or decay of many teeth " has each year proved the most frequent.

78. The average height, weight and chest measurements of aircraft apprentices enlisted during 1928 were 5ft. 5·3 in., 116·6 lb., 33·4 in., and of recruits 5 ft. 6·4 in., 128·4 lb. and 35·9 in. respectively. A table of correlated height, weight and chest measurements on which recruiting medical officers base their assessments was given in the report for 1927.

Hygiene.

79. *Accommodation.*—The replacement of temporary buildings of war-time construction by standardised permanent structures is proceeding as rapidly as funds will permit, and advantage is being taken of the experience gained at stations with regard to re-siting and orientation.

80. *Sick accommodation.*—The R.A.F. Combined Hospital at Basrah closed in July, and accommodation is now provided in a twelve-bedded sick quarters at Margil. In addition fourteen beds are reserved in the civilian Maude Memorial Hospital for service personnel including the sick from the naval units. A scale plan of the standard type of station sick quarters for a single squadron station is shown on page 74.

81. *Recreational facilities.*—Excellent facilities are provided at most of the large stations. The provision of squash racket courts at some of the smaller units of the Air Defence Group in order to assist officers of the Special Reserve and Auxiliary squadrons engaged in sedentary employment in attaining and maintaining physical fitness in the limited time available for exercise, is under consideration. Station dances for the personnel are reported to have an excellent effect in maintaining a high standard of social hygiene. In Iraq, however, there is still a great need for evening recreational facilities for the men, both in summer and winter, to relieve the monotony of the period after duty when outdoor games are over for the day.

82. *Food.*—No epidemic of food-poisoning has occurred in the period under review. After careful consideration it has been decided to make a daily ration-issue of wheat germ to personnel in Iraq and Aden for a period of twenty months, this being the minimum time in which it is thought an opinion can be formed as to its utility.

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83. *Water.*—Supplies are subjected to routine examination and special examination where indicated, and any variation suggestive of pollution is at once reported in order that the necessary investigations into causation can be carried out. In the intervening period chlorination is advised pending the restoration to standard.

84. *Conservancy.*—At Amman a water-carriage system has been completed, and at Aboukir a completely new drainage system is in course of installation. The removal of refuse from stations in England by contractors, either in the raw state or after incineration, is proving on the whole satisfactory.

POINTS OF INTEREST IN CONNECTION WITH CERTAIN DISEASES.

85. *Enteric group.*—Iraq reported an increased incidence of this group of diseases—33 cases representing an incidence of 13·6 per 1,000 of strength. Three deaths occurred and 14 cases were invalided to the United Kingdom. There were two peaks in the case incidence, one in May and a higher in October corresponding to the periods when flies are most numerous. The most careful investigation failed to reveal a carrier or any definite source of infection, but the October outbreak may have been due to a native who broke his journey from Kerbela to Baghdad by staying with a friend at Hinaidi from 1st to 3rd October, and died in a taxi on the way to the civil hospital in Baghdad on the latter date. The R.A.F. cases in this outbreak, ten in number, were reported between the 7th and 17th of the month.

A small epidemic which occurred at Calshot in September, four cases resulting in one death, was traced to a cook who was a carrier with no history of ever having suffered from the disease himself. His removal to hospital terminated the outbreak.

86. *Malaria.*—In India there was a striking decrease in the incidence of this disease. While favourable climatic conditions for the year undoubtedly constituted a factor in this reduction, the extensive mosquito-proofing of all buildings and the combined efforts of both medical staff and unit personnel in anti-malarial measures largely contributed to the favourable results. Paris Green, which has been extensively used in America and subsequently in Italy for killing anopheline larvae, is undergoing a trial with promising prospects. The number of cases in 1926, 648, representing 42 per cent. of all diseases, was reduced in 1928 to 278 cases, equivalent to a percentage of 23. Primary cases in the Mediterranean Littoral numbered 58 compared with 157 in 1927.

87. *Bubonic plague.*—An epidemic of plague occurred at Aden among the native labouring population of the port in February, 1,494 cases resulting in 1,107 deaths. All R.A.F. personnel and locally employed natives were given a prophylactic inoculation.

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and drafts arriving received the same protection between Port Said and Aden. As a result of these measures no cases occurred in the Royal Air Force.

88. *Effects of heat.*—Twenty-nine cases were reported during the year, 2 at home and 27 abroad. One of the cases abroad died.

89. *Venereal disease.*—The case incidence remained low except in Iraq, where the increase is possibly attributable to the stationing of Iraq levies and their families in the cantonment.

90. *Cholera.*—No cases were reported during 1928.

91. *Tonsillitis and naso-pharyngitis.*—A considerable number of cases occurred at Halton between February and April, a disquieting feature of the epidemic being the number of cases in which acute or sub-acute rheumatism developed. Of 427 cases of tonsillitis and naso-pharyngitis among aircraft apprentices, 43 developed symptoms of acute or sub-acute rheumatism. A routine bacteriological examination of the naso-pharynx was made in each case without yielding any definite result.

92. *Bugs.*—These pests were effectively dealt with in Egypt by closing the infected houses and fumigating with Zyklon " B."

Operations in Iraq.

93. Early in 1928 punitive operations in the Southern Desert, Iraq, afforded an opportunity of testing the preparedness and ingenuity in improvisation of the medical organisation in that command. The operations which were carried out by a base party and two mobile columns, in all some 300 men, lasted from January to June and took place under climatic conditions varying from the cold and rainy weather of winter to the tropical heat and frequent dust storms of the summer. Considering the difficulties the health of the force, which has been referred to in an earlier chapter, was good and the standard of sanitation commendably high.

94. In the earlier days of the expedition, deep pit latrines, open incinerators and improvised ablution benches were employed, but later on, as further stores became available, although the difficulties of transport to the end precluded the wants of the columns from being fully met, improvements were made at the base in the form of box type latrines, a semi-permanent bath house and a permanent closed-beehive incinerator.

95. Owing to the nature of the ground the supply of water to the columns presented great difficulty. The use of water carts was impossible and the columns had to rely on water from desert water holes. A small portable water purifying apparatus, using solid reagents and capable of clarifying, chlorinating and coarsely filtering, was designed locally on the principle of the Ishiji filter

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and made at the Aircraft Depôt in Iraq. At points where no desert water holes were available, water was carried by air to the columns from the base. All water, even at the base, required treatment and the principle adopted was to hyperchlorinate and remove the excess chlorine with thiosulphate.

96. Heating, for cooking, ablution and comfort during the bitter nights, was effected by the combustion of waste oil and water drip. Accommodation was provided in tents with a Chittai covered framework carried out from the tent in the form of a verandah, but the coolest building was found to be one the walls of which consisted of earth-filled petrol tins two deep, a roof consisting of an inner layer of tarpaulin and an outer covered with muttee, and a floor sunk some four feet below the level of the ground.

97. The difficulties met with at the outset of such an expedition owing to the absence of material and suitable tools for the sanitary personnel have already been met by the introduction of a revised scale of sanitary equipment for each unit, and several recommendations, as the result of the experience gained on these operations, are under consideration.

Vaccination and Inoculation.

98. *Vaccination.*—Drafts totalling 2,223 airmen left the United Kingdom, all having recently been vaccinated. Primary and secondary vaccinations performed at home during the year numbered 9,858, equivalent to a ratio of 441 per 1,000 of strength, compared with 456 per 1,000 in 1927, 235 in 1926, 244 in 1925, 276 in 1924, and 379 in 1923. Abroad, 2,767 vaccinations were performed recording a ratio of 341 per 1,000 of strength, compared with 93 per 1,000 in 1927. The vaccination state of the total force continues to be satisfactory.

99. *Inoculation.*—At home, 180 persons received one dose of T.A.B.C. vaccine and 2,901 two doses. Abroad, 6,503 inoculations were performed, of which 5,711 were single doses, being distributed as follows :—Middle East 2,389 one-dose, 99 two-dose ; Iraq 1,556 one-dose, 223 two-dose ; India 1,725 one-dose, 366 two-dose ; Aden 41 one-dose, 104 two-dose. A high inoculation state was maintained among all personnel both at home and abroad.

Instruction in Hygiene.

100. Demonstrations of the most modern appliances used in barrack and field sanitation continued during the year at the R.A.F. Depôt, Uxbridge. The number of models in the museum was increased from 67 to 87 during 1928, and an economy was effected by dispensing with the services of the coppersmith and carpenter, the model-making, general upkeep and demonstrations

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being carried out entirely by one officer and two airmen of the medical branch. No material was drawn from stores, and the twenty new models and renovations to existing models were made from waste material available at the Depôt.

101. Newly-joined officers of the general duties branch and serving airmen receive two hours' instruction, recruits an average of four hours, and sanitary assistants a three months' course. Newly-joined medical officers who are undergoing their course at the Medical Training Depôt, Halton, are given a two hours' demonstration of models, and officers and airmen due for promotion examinations visit the museum from time to time.

102. The syllabus of work consists of :—

Lectures.—First hour (recruits, newly-joined officers, non-commissioned officers undergoing training at the School of Physical Training or undergoing refresher courses at the Depôt, and drafts the day before posting from the Depôt).

General principles of hygiene.
Issue of pamphlet " Dangers of V.D." to airmen and " Memorandum on Prevention of V.D." to officers.
Chief points about water supplies with demonstration of Horrock's test and the R.A.F. water cart.
Demonstration of museum models.

Second hour (recruits, medical orderlies under training and newly-joined officers).

Preservation of health in the tropics.
Personal hygiene.
Spread of diseases.
Destruction of insects which transmit disease.
Demonstration of museum models.

Three months' course (sanitary assistants)—

(*a*) Text books—Manual of Military Hygiene, Army Manual of Sanitation.

(*b*) Practical work—Instruction in carpentry and tinsmithing, field sanitation, fumigation and steam disinfection.

(*c*) Visits—Museums, water-works, sewage farms, etc.

103. During the year instruction and demonstrations were given to 282 officers, 1,847 airmen, and 26 sanitary assistants.

Pathological Work performed in R.A.F. Laboratories.

104. The total number of routine specimens examined in R.A.F. pathological laboratories in the United Kingdom and abroad during 1928 amounted to 28,551 ; that is, 3,914 more than in the previous year. The laboratory at Basrah closed down during the year. A synopsis of the work done in each laboratory is shown in table XXVI, page 70.

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R.A.F. Pathological Laboratory, Halton

Teaching.

105. An important part in service life is instructional, and considerable time has been spent this year in developing this side of the work. Twenty-three medical officers passed through a course of instruction in pathology, hygiene and tropical medicine. Four airmen received a full course of instruction to qualify as laboratory assistants. Courses of instruction in general sanitation and hygiene were given to 398 aircraft apprentices prior to their "passing out" at Halton. The courses consisted of lantern lectures, aided by instruction on models. The subjects dealt with were as follows :—

Flies—their life, history and habits ; diseases conveyed by flies.

Latrines, urinals, destructors—uses and construction.

Mosquitoes and sandflies—their habits and diseases conveyed by ; anti-measures.

Water and food—potable and ablution water ; value of cleanliness ; water-borne diseases.

Chlorination of water (Horrock's test)—care of water bottle ; dangers of vegetables and fruit abroad ; bazaars.

Control of cookhouses.

Fleas, lice and rats—diseases conveyed by ; disinfestation, on large scale, and personal.

Hygiene of the tropics.

Camp sanitation as a whole.

106. In connection with the above courses a museum was opened and forty scale models of sanitary appliances, such as can be readily fashioned under active service conditions, were constructed. These exhibits, which include a detail model of a perimeter camp in the desert, were made by the laboratory staff in their spare time out of waste material and no cost to the service was incurred. Four hundred and forty-one individuals in all received instruction in the museum during the twelve months.

Investigations.

107. An attempt was made to estimate the prophylactic value of so-called anti-influenza vaccine among apprentices, between the ages of 15 to 18 years, living under similar conditions in barracks at Halton. Observations and records were made concerning 2,010 apprentices over a period of three winter months, i.e., the period of supposed protective action of the vaccines used. Only apprentices who were desirous of being inoculated were treated with the vaccine—969 apprentices were inoculated ;

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1041 apprentices were not innoculated. It was difficult to estimate what constituted an attack of influenza, but as the anti-influenza vaccines used had the composition of ordinary anti-catarrh vaccines, it was decided to record the occurrence of all cases of acute naso-pharyngitis and typical influenza. The results are shown in the table below.

ANTI-INFLUENZA INOCULATION STATISTICS.

No. of apprentices inoculated.	No. of apprentices inoculated attacked with influenza.	No. of apprentices uninoculated.	No. of uninoculated apprentices attacked with influenza.
969	319 *i.e.*, 32·9%	1,041	384 *i.e.*, 36·8%

108. From the above results it cannot be claimed that anti-influenza vaccine lessens the incidence of influenza or acute naso-pharyngitis in any appreciable degree. As the outbreak of influenza was of a very mild type, no information was gained regarding the action of vaccines on the lessening of the activity of the disease, or of its complications. It may be remarked that two anti-influenza vaccines prepared in different laboratories were used in this investigation. The results obtained were so similar, 32·7 per cent. and 33·2 per cent. respectively, that the figures have been grouped together under one heading.

109. In the laboratory at Hinaidi, Iraq, a supply of concentrated orange juice which had been in the country just over a year was examined to ascertain the continued presence of water soluble vitamin C. This supply, a proprietary preparation, had arrived at Basrah late in January, 1927. The major portion was stored in the ice house of the power plant at Hinaidi where the temperature even in the middle of summer rarely reaches 40° Fahrenheit. A number of young guinea pigs, with adequate controls, were placed on a basal diet lacking vitamin C until severe scorbutic symptoms were apparent. It was found that one cubic centimetre of the orange juice added to the basal diet banished all symptoms and caused an immediate gain in weight. As far as could be ascertained the fifteen months storage had affected the vitamin content but little.

Princess Mary's Royal Air Force Nursing Service.

110. The average strength of the nursing service during 1928 was 97 compared with 105 in 1927 and 119 in 1926. Six candidates were appointed during the year and ten serving members left the service—nine voluntary resignations and one on reaching retiring age.

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111. Twenty-five members were admitted to hospital during the year—twenty at home and five abroad representing 642 days sickness or an average duration of each case of 25·6 days compared with 30·3 days in 1927. The average numbers of days sickness per member was 6·6 compared with 9·6 in 1927, and the number of daily sick fell from 2·7 in 1927 to 1·8 in 1928. There was no disease of outstanding frequency in the service during 1928; one member was invalided to the United Kingdom from abroad and two were operated upon during the year, one for appendectomy and one for cholecystectomy. There were no deaths during 1928.

Transfer of Casualties by Air.

112. Figures have been given in the last five reports showing the number of evacuations of casualties by air in commands abroad and a short account of the development of this method of transporting cases of sickness is presented in the following paragraphs. The important part that evacuation of patients by air plays in those commands where the nature of the country is such that any other means of transport is impossible or so laborious that the discomfort of the journey and the time taken would severely menace the patient's chances of recovery, becomes more evident each year.

113. In 1920 the first R.A.F. aeroplane ambulance for duty in Iraq was sent to Egypt and erected at Aboukir. This aeroplane became unserviceable in 1922 before reaching Iraq and without carrying any cases. Two further ambulances marked with a red cross were erected at Aboukir; one, completed in the winter of 1922–23, was damaged on its journey to Iraq and was returned to Aboukir for repair, the other arrived at Baghdad early in 1923 and within a few weeks met with an accident and was not flown again. Early in 1924 the repaired ambulance from Aboukir reached Baghdad and was the last ambulance as such to be used in the Royal Air Force. In October, 1925, the red cross was deleted and the aeroplane came on to the strength of troop carriers.

114. Since the middle of 1924 to the present date all troop carriers allocated to Iraq are modified so as to be convertible locally to carry two stretcher cases in addition to sitting cases when called upon for the transport of casualties. In addition to these convertible aeroplanes certain smaller types are also employed in evacuating sitting or even lying cases when the nature of the terrain precludes the landing of a large troop carrier or in an emergency when no other type is available. On the smaller aeroplanes a lying case is carried in a Neil Robertson stretcher secured along the top of the fuselage.

115. In Palestine the evacuation of casualties by air has developed into a routine procedure since 1927 and, as in Iraq since the end of 1925, there is no red cross air ambulance and

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service types of aircraft are employed on these duties. In contrast to Iraq, however, Palestine has only one aircraft which is convertible into an ambulance to carry more than one lying case, and most of the evacuations are carried out on the smaller types of aircraft.

116. During the years 1923 to 1928 the number of cases evacuated by air in Iraq were 359, 81, 176, 130, 56 and 72 respectively, and in Palestine during 1927 and 1928, 69 and 14. In 1926 in Iraq, 76 journeys were made and 13,848 miles flown in transporting the 130 cases referred to ; of these journeys 37 were specially made for the purpose, 34 on convertible and three on non-convertible aeroplanes, while 39 were routine trips, 25 on convertible and 14 on non-convertible aeroplanes. During the two years 1927 and 1928 the corresponding figures were 44 journeys, 7,322 miles, 56 cases, 23 (17 and 6) special journeys, 21 (13 and 8) routine trips, and 43 journeys, 10,130 miles, 72 cases, 18 (14 and 4) special journeys, 25 (15 and 10) routine trips, respectively. In Palestine during 1927 and 1928, 69 and 14 cases respectively, necessitating 50 and 13 journeys, were evacuated by air. In 1927 three journeys were specially made and 47 routine trips were employed ; in 1928, 2 aircraft were requisitioned for medical purposes and the remaining eleven trips were communication or other duty flights.

117. From the foregoing paragraphs it will be seen that there are now no aircraft definitely allocated to medical use and there are no routine hospital journeys by air as such, but the practice of employing service types of aircraft either carrying out a routine communication flight or specially requisitioned for medical use, has proved satisfactory and economical.

Royal Air Force Reserve of Officers.

118. During 1928, 148 candidates for the Reserve of Officers were examined at the Central Medical Establishment, of whom 107 were accepted as fit—72 per cent. compared with 56 per cent. in 1927. Of the 41 candidates rejected 32 were considered to be permanently and nine temporarily unfit, and the causes of rejection are shown in Table XXI., page 64.

119. The health of the 587 officers who underwent their annual training was good : twenty-five cases representing 255 days' sickness were notified. Sixteen flying accidents occurred resulting in six admissions to hospital (two with severe and four with minor injuries), two slight injuries necessitating no in-patient treatment, and eight in which the occupants escaped injury. There were no deaths.

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120. An endeavour is made each year to follow the practice of the regular air force of medically examining each officer, but, as will readily be appreciated, it is only possible in a force such as the Reserve of Air Force Officers to examine a percentage of the strength. This percentage is increasing, and it is hoped that the authorisation during 1928 of examinations by civilian medical practitioners will raise the present figure still higher.

121. In all, 216 pilots out of 689 were medically examined either by the Principal Medical Officer of the Reserve of Air Force Officers or the R.A.F. Central Medical Establishment during the year, exclusive of members of the university squadrons who were examined by medical officers at R.A.F. stations. The standard of fitness in the reserve compares very favourably with that of candidates for the regular air force, and an analysis of the 111 routine medical examinations by the Principal Medical Officer, taking the standards in use at the Central Medical Establishment, showed that approximately 69 per cent. were above average, 30 per cent. average and one per cent. below average in the physical efficiency tests, and 21 per cent. very good, 33 per cent. good, 20 per cent. fair and 9 per cent. poor in the visual acuity tests (17 per cent. of the results of these tests were not recorded).

Other Cases Treated in Certain R.A.F. Hospitals and Sick Quarters.

122. The figures indicating the average number of constantly sick, deaths and total number of cases among personnel other than of the Royal Air Force who were admitted to R.A.F. hospitals and sick quarters during 1928 are given in table XXVIII., page 71.

Surgical Operations.

123. Table XXIX., page 72, shows the number of surgical operations carried out on R.A.F. personnel during 1928.

Dental Treatment.

124. Table XXVII., page 71, gives a summary of the dental work carried out by R.A.F. dental surgeons during 1928. R.A.F. personnel in Malta and India receive treatment from the Army Dental Corps. The proportion of conservative work done to extractions (2 to 1) remains practically the same as in 1927. Forty-six dentures were supplied to serving personnel from civilian sources during the year compared with six in 1927.

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TABLE XIX.—RESULTS OF 718 EXAMINATIONS AT THE CENTRAL MEDICAL ESTABLISHMENT ON CANDIDATES FOR FLYING DUTIES.

Class of candidate.	Number accepted	Number rejected.		Total.	Percentage accepted.
		Finally	Temporarily.		
Cadets	72	16	8	96	75
Airman pilots	87	33	8	128	68
Short service commissions	268	145	40	453	59
Fleet Air Arm	19	1	2	22	86
Secondments from Army	4	—	—	4	100
Permanent commissions (university nominations)	10	5	—	15	67
Total	460	200	58	718	64

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TABLE XX.—CANDIDATES FOR FLYING DUTIES.

Average physical efficiency tests and measurements recorded at the Central Medical Establishment.

——	Unit of measurement.	Class of candidate.				
		Cadets.	Short service commission officers. (*a*)	Airman pilots.	Fleet Air Arm officers.	All classes.
Number accepted ..	—	72	282	87	19	460
Average age	Years.	18·7	21·6	21·7	23·7	21·2
Average results of tests.						
Standing height ..	cms.	173·9	175·5	174·5	176·9	175·1
Weight ..	Kgs.	63·0	65·0	64·6	69·3	64·8
Chest ..	Cms.	85·1	86·3	86·7	88·4	86·3
Vital capacity	c.c.	4,766	4,897	4,899	5,065	4,884
Breath-holding ..	seconds	86·1	76·8	97·7	85·0	82·5
Expiratory force ..	mm.hg.	146·8	137·8	146·3	155·3	141·5
Fatigue test	seconds	69·0	64·0	73·4	70·4	66·9
Systolic pressure ..	mm.hg.	128·7	129·6	127·5	128·8	129·0
Diastolic pressure ..	mm.hg.	77·2	79·5	77·8	78·8	78·8
Pulse rate :—						
Sitting ..	per min.	71·5	73·3	70·5	69·8	72·3
Standing..	per min.	77·8	80·8	77·1	74·8	79·4
After exercise ..	per min.	105·1	106·6	102·6	99·8	105·3
Time taken to return to normal ..	seconds	28·7	30·9	26·6	27·1	29·6

Note (*a*) : this group includes 4 officers seconded from Army and 10 officers with nominations for permanent commissions from Universities.

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TABLE XXI.—CAUSES OF REJECTION BY THE CENTRAL MEDICAL ESTABLISHMENT, 1928.

Class of candidate.	(1) Vision.		(2) Ear, nose, throat and teeth.		(3) Medical and surgical.		(4) Defective physical efficiency.		(5) Combinations of (1), (2), (3), with (4).		Total.	
	Temporarily.	Finally.	Temporarily.	Finally.	Temporarily.	Finally.	Temporarily.	Finally.	Temporarily.	Finally.	Temporarily.	Finally.
Permanent commissions	—	4	1	3	3	11	—	5	—	7	4	30
Short service commissions ..	4	53	1	3	18	13	11	48	7	29	41	146
Cadets	1	6	1	—	4	5	2	—	—	5	8	16
R.A.F. Reserve ..	2	16	1	—	1	14	4	—	1	2	9	32
Airman pilots ..	—	14	2	3	3	10	1	1	2	5	8	33
Auxiliary Air Force	2	2	—	—	—	—	1	1	—	1	3	4
Fleet Air Arm ..	—	—	—	—	1	—	1	1	—	—	2	1
Casuals	1	3	1	1	—	1	—	—	—	—	2	5
Secondments to R.A.F.	—	—	—	—	—	1	—	—	—	—	—	1
Total ..	10	98	7	10	30	55	20	56	10	49	77	268

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TABLE XXII.—PHYSICAL ASSESSMENT IN RESPECT OF AIR DUTIES OF OFFICERS OF THE GENERAL DUTIES BRANCH LIABLE TO FULL FLYING DUTIES.

——	Year.	Fit, full flying.	Unfit, full flying.	Total.	Percentage fit, full flying.
At home	1928	1,330	205	1,535	87
	1927	*1,308*	*188*	*1,496*	*87*
	1926	*1,375*	*191*	*1,566*	*88*
	1925	*1,401*	*154*	*1,555*	*90*
	1924	*1,384*	*168*	*1,552*	*89*
	1923	*1,330*	*196*	*1,526*	*87*
	1922	*1,181*	*173*	*1,354*	*87*
Abroad	1928	517	48	565	92
	1927	*519*	*56*	*575*	*90*
	1926	*593*	*57*	*650*	*91*
	1925	*665*	*52*	*717*	*93*
	1924	*672*	*60*	*732*	*92*
	1923	*616*	*85*	*701*	*88*
	1922	*638*	*104*	*742*	*86*
Total	1928	1,847	253	2,100	88
	1927	*1,827*	*244*	*2,071*	*88*
	1926	*1,968*	*248*	*2,216*	*89*
	1925	*2,066*	*206*	*2,272*	*91*
	1924	*2,056*	*228*	*2,284*	*90*
	1923	*1,946*	*281*	*2,227*	*87*
	1922	*1,819*	*277*	*2,096*	*87*

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Table XXIII.—Results of Further Tests of Officers of the General Duties Branch and of Airman Pilots.

Nature of test.	Officers.						Airman pilots, 230.		Total officers and airman pilots, 2,330.	
	Fit for flying duties, 1,847.		Unfit for flying duties, 253.		Total, 2,100.					
	Numbers.	Percentage.	Numbers.	Percentage.	Numbers.	Percentage.	Numbers.	Percentage.	Numbers.	Percentage.
Tremor—absent	917	50	103	41	1,020	49	94	41	1,141	48
,, present	930	50	150	59	1,080	51	136	59	1,216	52
Self-balancing, steady	1,750	95	209	83	1,959	93	220	96	2,179	94
,, ,, unsteady	97	5	44	17	141	7	10	4	151	6
Knee jerks—normal	1,650	89	206	81	1,856	88	207	90	2,063	89
,, ,, abnormal	197	11	47	19	244	12	23	10	267	11
Vision, 6/6 both eyes	1,742	94	202	80	1,944	93	224	97	2,168	93
,, 6/6 and 6/9; 6/9 and 6/9 ..	77	4	25	10	102	5	5	2	107	5
,, over 6/9 in either eye	28	2	26	10	54	2	1	1	55	2
Nasopharynx—normal	1,835	99	246	97	2,081	99	230	100	2,311	99
,, abnormal	12	1	7	3	19	1	—	—	19	1
Teeth—no treatment required	1,518	82	207	82	1,725	82	174	76	1,899	82
,, treatment required	329	18	46	18	375	18	56	24	431	18
Pyorrhœa—absent	1,835	99	244	96	2,079	99	225	98	2,304	99
,, present	12	1	9	4	21	1	5	2	26	1

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TABLE XXIV.—AVERAGE RESULTS OF TESTS OF 1,847 SERVING OFFICERS OF THE GENERAL DUTIES BRANCH AND 222 AIRMAN PILOTS FIT FOR FLYING DUTIES.

—	Age group.	No. examined.	Age.	Weight.	Time breath held.	Expiratory force.	Fatigue test.	Pulse rate per minute.			Pulse time taken to return to normal.	Systolic pressure.	Pulse pressure.
								Sitting.	Standing.	After-exercise.			
OFFICERS.	Yrs.		Yrs.	Kgs.	Secs.	Mm. Hg.	Secs.				Secs.	Mm. Hg.	Mm. Hg.
At home	Under 25 ..	469	22·2	69·5	80·4	157·8	63·2	71·5	77·0	99·6	22·1	123·8	46·9
	25–30 ..	450	28·1	69·7	80·1	166·5	64·6	72·4	78·4	100·7	22·3	124·2	46·9
	31 and over	411	34·3	70·5	75·1	166·3	63·9	71·7	77·3	99·1	22·7	124·4	45·1
	All ages ..	1,330	28·0	69·9	78·6	163·3	63·9	71·9	77·6	99·8	22·3	124·1	46·3
Abroad	Under 25 ..	159	23·0	67·8	79·9	149·8	67·2	73·0	81·5	101·9	21·7	122·2	43·7
	25–30 ..	209	27·8	68·7	79·5	155·9	63·3	73·3	82·0	101·3	22·9	123·5	44·3
	31 and over	149	34·5	68·9	77·8	158·3	59·8	73·5	81·6	100·8	23·9	121·1	41·9
	All ages ..	517	28·3	68·5	79·1	154·7	63·5	73·3	81·8	101·3	22·8	122·4	43·4
Total force ..	Under 25 ..	628	22·4	69·0	80·3	155·8	64·2	71·9	78·2	100·2	22·0	123·4	46·1
	25–30 ..	659	28·0	69·4	79·9	163·1	64·2	72·7	79·6	100·9	22·5	123·9	46·0
	31 and over	560	34·4	70·1	75·8	164·2	62·8	72·2	78·4	99·5	23·0	123·5	44·3
	All ages ..	1,847	28·1	69·5	78·8	160·9	63·8	72·3	78·8	100·2	22·5	123·6	45·5

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AIRMAN PILOTS.													
At home	Under 25 ..	45	23·4	65·6	75·9	156·9	63·5	72·6	77·5	104·0	24·6	127·6	49·7
	25–30 ..	101	27·2	66·9	76·0	160·8	62·4	72·0	77·3	100·6	22·3	126·8	48·7
	31 and over	10	32·7	68·5	72·4	162·8	65·4	75·8	80·4	102·0	23·0	132·0	47·5
	All ages ..	156	26·4	66·6	75·8	159·8	62·9	72·4	77·6	101·7	23·0	127·4	48·9
Abroad	Under 25 ..	32	23·7	64·5	81·5	151·9	59·4	73·7	81·9	102·0	25·8	125·5	47·6
	25–30 ..	30	26·9	67·0	79·9	156·3	59·5	71·2	79·4	100·4	23·8	123·9	43·7
	31 and over	4	32·3	62·6	80·0	145·5	47·5	75·0	82·5	99·0	18·8	130·5	52·5
	All ages ..	66	25·7	65·5	80·7	153·5	58·7	72·6	80·8	101·1	24·5	125·1	46·1
Total force ..	Under 25 ..	77	23·5	65·1	78·3	154·8	61·8	73·0	79·3	103·2	25·1	126·8	48·9
	25–30 ..	131	27·1	66·9	76·9	159·8	61·7	71·8	77·8	100·5	22·7	126·1	47·5
	31 and over	14	32·6	66·8	74·6	157·9	60·3	75·6	81·0	101·1	21·8	131·6	49·0
	All ages ..	222	26·2	66·3	77·2	157·9	61·7	72·5	78·5	101·5	23·4	126·7	48·1

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TABLE XXV.—REASONS OF UNFITNESS (TEMPORARY OR OTHERWISE) FOR FULL FLYING DUTIES OF 253 OFFICERS OF THE GENERAL DUTIES BRANCH.

Defect.	At home.	Abroad.	Total.
Vision	43	23	66
Ears or teeth	15	3	18
Medical	62	8	70
Surgical	69	6	75
D.P.E.	14	7	21
D.P.E. and vision	2	—	2
D.P.E. and medical	—	1	1
	205	48	253

TABLE XXVI.—SUMMARY OF LABORATORY WORK CARRIED OUT IN THE ROYAL AIR FORCE.

Nature of Examinations.	United Kingdom.			Abroad.		Total.
	Central.	Cranwell.	Halton.	Hinaidi.	Palestine.	
Analyses—						
Fæces	85	3	6	12	—	106
Gastric	61	—	57	4	—	122
Urine	1,214	948	4,707	1,214	232	8,315
Food	58	—	—	—	23	81
Sewage	67	—	—	—	—	67
Water	315	—	—	—	52	367
Blood—						
Agglutinations	179	4	5	154	2	344
Coagulation time	10	2	155	9	—	176
Counts	453	44	465	210	56	1,128
Cultures	178	5	6	115	6	310
Malaria parasites	394	12	214	672	377	1,669
Sugar	146	—	—	—	—	146
Urea	170	—	21	2	—	193
Van den Bergh	24	—	—	3	—	27
Wassermann	530	—	—	414	—	944
Cerebro-spinal fluid—						
Bio-chemical	8	—	2	—	—	10
Cell counts	8	—	3	—	—	11
Complement deviation	6	—	—	1	—	7
Cultures	8	—	1	1	—	10
Meningococcus	7	—	1	1	—	9
Tubercle bacillus	8	—	—	—	—	8
Fæces—						
Bacteria	727	6	148	1,148	111	2,140
Protozoa	806	37	371	1,099	254	2,567
Helminths	420	37	167	505	254	1,383
Pathological specimens	39	5	14	5	—	63
Peri dental smears	35	—	3	—	—	38
Pus, exudates and transudates—						
Bio-chemical	25	—	—	1	—	26
Cytological	70	16	—	18	—	104
Bacillus Ducrey	7	—	—	108	—	115
Gonococcus	60	140	627	448	216	1,491
Spironema	8	1	20	124	—	153
Pyogenic organisms	293	1	28	30	10	362
Leishmania	3	—	14	22	—	39
Renal efficiency tests	154	—	21	6	—	181
Sputa—						
General	283	—	264	95	9	651
Tubercle bacillus	424	84	670	258	29	1,465
Throat swabs	1,490	38	985	145	36	2,694
Vaccines-autogenous	205	3	13	18	3	242
Miscellaneous	307	7	43	405	25	787
TOTAL	9,285	1,393	8,931	7,247	1,685	28,551

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TABLE XXVII.—DENTAL TREATMENT CARRIED OUT BY R.A.F. DENTAL SURGEONS.

——	United Kingdom (average strength, 22,359).	Mediterranean Littoral (average strength, 3,284).	Iraq (average strength, 2,412).	Total (average strength, for the year excluding India, 28,055).
Fillings	29,307	2,839	923	33,069
Scalings	4,895	982	323	6,200
Extractions	12,859	1,496	767	15,122
Root fillings	606	63	39	708
No. of dentures supplied	343	87	78	508
No. of personnel supplied with dentures ..	241	72	65	378
Repairs to dentures ..	55	56	32	143
Remodels..	114	37	25	176

TABLE XXVIII.—PERSONNEL, OTHER THAN OF THE ROYAL AIR FORCE, TREATED IN CERTAIN R.A.F. HOSPITALS AND STATION SICK QUARTERS.

——	No. of admissions.	Deaths.	Average No. constantly sick.
IRAQ.			
British Army troops	58	—	4·25
Indian troops	514	8	17·90
Indian followers	155	2	6·70
Royal Navy	7	—	0·40
All others	58	5	2·14
MIDDLE EAST.			
British Army troops	19	—	1·01
All others	39	1	1·64

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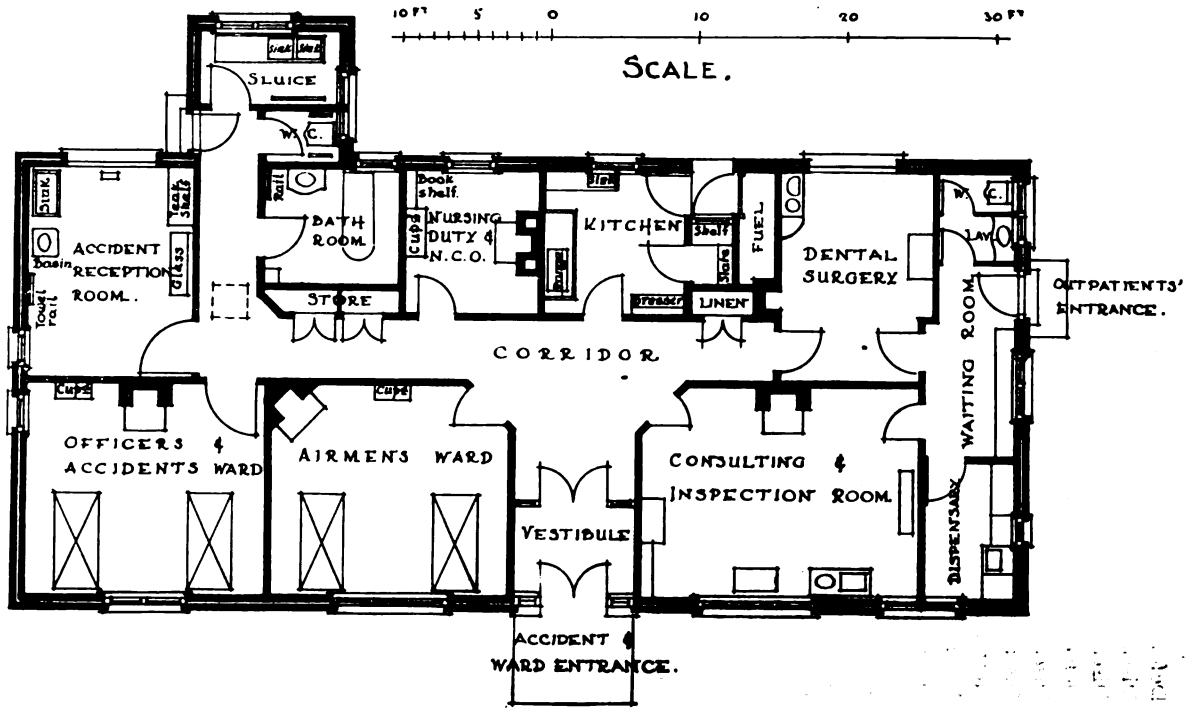

SICK QUARTERS (ONE SQDRN)

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3

AIR MINISTRY.

REPORT

ON THE

HEALTH OF THE ROYAL AIR FORCE

FOR THE YEAR

1929.

LONDON:
PRINTED AND PUBLISHED BY HIS MAJESTY'S STATIONERY OFFICE
To be purchased directly from H.M. STATIONERY OFFICE at the following addresses:
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REPORT

ON THE

HEALTH OF THE ROYAL AIR FORCE

FOR THE YEAR

1929.

The following Report on the Health of the Royal Air Force for the Year 1929 is issued for the information and guidance of all concerned.

By Command of the Air Council,

W. Nicholson

AIR MINISTRY,

Published September, 1930.

LONDON:
PRINTED AND PUBLISHED BY HIS MAJESTY'S STATIONERY OFFICE
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AIR MINISTRY,
KINGSWAY,
LONDON, W.C.2.

To the Secretary of the Air Council.

Sir,

I have the honour to submit the accompanying report on the health of the Royal Air Force during 1929.

The incidences of sickness, of deaths, and of invalidings, both from abroad and finally from the service, although slightly higher than in 1928, are nevertheless considered to be very satisfactory and are well below the averages of the two earlier periods 1921–4 and 1925–8. The " constantly sick " figure remains very steady at 24·3 per thousand.

There were considerable increases in the incidences of influenza and tonsillitis at home and malaria abroad compared with the previous year, and these increases were mainly responsible for the increased sickness incidence.

On the other hand, a very appreciable reduction in the incidence of venereal diseases has been effected and the rate of fifteen per 1,000, the lowest so far recorded, must be considered as very satisfactory.

I have the honour to be, Sir,
Your obedient Servant,
J. McINTYRE,
Director of Medical Services,
Royal Air Force.

July, 1930.

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TABLE I.—SICKNESS AT HOME AND ABROAD—ANALYSED BY GEOGRAPHICAL AREAS.

Geographical Area.	Average strength.	Fresh cases of sickness.			Deaths.	Invalided out of service.	Invalided to United Kingdom.	Average duration of each case in days.		Average No. of days sickness per head.		Incidence per 1,000 of strength.					
												Fresh cases of sickness.				No. sick daily.	
		Less than 48 hours.	More than 48 hours.	Total.				48-hour cases included.	48-hour cases excluded.	48-hour cases included.	48-hour cases excluded.	48-hour cases included.	48-hour cases excluded.	Deaths.	Invalided out of service.	Invalided to United Kingdom.	48-hour cases included.	48-hour cases excluded.
United Kingdom—																	
1929§	22,300	4,780	9,181	13,961	67	213	—	12·6	18·4	7·9	7·6	626·1	411·7	3·0	9·6	—	21·6	20·8
Average 1925–28 (*a*) ..	*22,758*	*6,156*	*8,286*	*14,442*	*78*	*192*	—	*11·7*	*19·3*	*7·4*	*7·0*	*634·6*	*364·1*	*3·4*	*8·4*	—	*20·3*	*19·2*
Average 1921–24	*21,452*	*10,272*	*8,122*	*18,394*	*69*	*292**	—	*8·8*	*18·1*	*7·5*	*6·8*	*857·5*	*378·6*	*3·2*	*13·6**	—	*20·5*	*18·6*
Fleet Air Arm Home and Abroad—																	
1929..	826	345	290	635	5	1	6	8·0	16·0	6·1	5·6	768·8	351·1	6·1	1·2	13·6	16·7	15·3
1928..	*812*	*626*	*330*	*956*	*8*	*2*	*4*	*6·3*	*15·7*	*7·4*	*6·4*	*1177·3*	*406·4*	*9·9*	*2·5*	*9·2*	*20·2*	*17·5*
1927..	*711*	*327*	*256*	*583*	*8*	*2*	*5*	*7·6*	*15·4*	*6·3*	*5·5*	*820·0*	*360·1*	*11·3*	*2·8*	*11·4*	*17·2*	*15·0*
Mediterranean Littoral—																	
1929§	3,574	1,681	1,713	3,394	14	9	31	8·3	15·0	7·9	7·2	949·6	479·3	3·9	2·5	8·7	21·6	19·7
Average 1925–28 (*a*) ..	*3,435*	*1,891*	*1,903*	*3,794*	*21*	*17*	*61*	*9·8*	*18·2*	*10·9*	*10·1*	*1104·5*	*554·0*	*6·1*	*4·9*	*17·8*	*29·9*	*27·7*
Average 1921–24	*3,669*	*2,458*	*2,216*	*4,674*	*19*	*22*	*59*	*9·7*	*18·9*	*12·4*	*11·4*	*1274·0*	*604·0*	*5·0*	*6·1*	*15·4*	*33·9*	*31·2*
Iraq—																	
1929..	2,273	780	1,648	2,428	13	8	93	15·7	22·5	16·8	16·3	1068·2	725·0	5·7	3·5	40·9	46·0	44·7
Average 1925–28	*3,072*	*1,788*	*2,459*	*4,247*	*21*	*15*	*79*	*11·7*	*19·1*	*16·2*	*15·3*	*1382·5*	*800·5*	*6·8*	*4·9*	*25·7*	*44·4*	*41·9*
Average 1921–24	*2,712*	*3,193*	*2,726*	*5,919*	*25*	*17*	*80*	*8·9*	*17·8*	*19·5*	*17·9*	*2182·4*	*1005·1*	*9·2*	*6·2*	*29·5*	*53·4*	*49·0*
India—																	
1929..	2,101	1,062	1,431	2,493	6	7	19	10·0	16·3	11·8	11·1	1186·6	681·1	2·9	3·3	9·0	32·3	30·4
Average 1925–28	*1,953*	*1,200*	*1,355*	*2,555*	*14*	*10*	*46*	*8·3*	*14·4*	*10·8*	*10·0*	*1308·2*	*693·8*	*7·2*	*5·1*	*23·6*	*29·6*	*27·4*
Average 1921–24	*1,827*	*2,851*	*1,366*	*4,217*	*16*	*12*	*44*	*6·6*	*17·3*	*15·2*	*12·9*	*2308·0*	*747·4*	*9·0*	*6·7*	*24·2*	*41·6*	*35·3*
Total, Abroad																	
§‡1929	8,033	3,523	4,852	8,375	33	24	150	11·1	18·1	11·6	10·9	1042·6	604·0	4·1	3·0	18·7	31·8	29·9
†Average 1925–28 (*a*) ..	*8,513*	*4,905*	*5,763*	*10,668*	*57*	*42*	*188*	*10·2*	*17·7*	*12·8*	*12·0*	*1253·1*	*677·0*	*6·7*	*4·9*	*22·1*	*35·1*	*32·9*
Average 1921–24	*8,208*	*8,502*	*6,308*	*14,810*	*60*	*51*	*183*	*8·5*	*18·1*	*15·4*	*13·9*	*1804·5*	*768·6*	*7·3*	*6·2*	*22·4*	*42·2*	*38·1*
Total Force—																	
1929..	31,159	8,648	14,323	22,971	105	238	156	11·9	18·3	8·8	8·4	737·2	459·7	3·4	7·6	18·4	24·1	23·0
Average 1925–28	*31,662*	*11,299*	*14,196*	*25,496*	*138*	*236*	*190*	*11·0*	*18·6*	*8·9*	*8·3*	*805·5*	*448·5*	*4·4*	*7·5*	*21·8*	*24·4*	*22·7*
Average 1921–24	*29,660*	*18,774*	*14,430*	*33,204*	*129*	*343**	*183*	*8·6*	*18·1*	*9·7*	*8·8*	*1119·4*	*486·5*	*4·4*	*11·6**	*22·4*	*26·6*	*24·1*

* Excludes 711 invalids through Discharge Centre Medical Board during 1921.
§ Excludes Fleet Air Arm. (*a*) Excludes Fleet Air Arm for 1927 and 1928.
‡ Includes sickness at Far East stations: 60 cases, and 7 invalided to the United Kingdom.
† Includes sickness at Far East stations in 1927 and 1928.

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CHAPTER I.—THE HEALTH OF THE ROYAL AIR FORCE AT HOME AND ABROAD.

General.

1. The total sickness in the force as a whole is analysed in table I, page viii, by commands. There has been no alteration in the constitution of these commands since the last report and the figures given in the table for 1929 are comparable with those for 1928, except that the preceding periods cover the two 4-year terms, 1921–4 and 1925–8. The average strengths of the commands shown under Mediterranean Littoral for 1929 were, Malta 372, Egypt and Palestine 2,680, Aden 378, and drafts *en route* to and from the United Kingdom 144.

2. The incidence of sickness at home and abroad for all cases was 737·2 per 1,000 of strength compared with 701·4 in 1928 and averages over the two preceding periods of 805·5 and 1119·4 respectively: the incidence of cases admitted to sick quarters or hospital (i.e., over 48 hours duration) was 459·7 compared with 430·1 in 1928 and averages of 448·5 and 486·5 tor the two preceding periods. This increase in incidence compared with last year is due to the home figures for which a rise in the number of cases of influenza, 1,302 compared with 292 in 1928, was largely responsible.

3. At home the incidence of admissions to hospital or sick quarters rose to 411·7 in 1929 from 357·7 in 1928 and averages of 364·1 and 378·6 for the two preceding periods: the incidence abroad continues to decrease—604·0 in 1929 compared with 640·0 for 1928 and averages over the preceding periods of 677·0 and 768·6.

4. In the force as a whole there has been a very slight reduction in the average number of days sickness per head, and an appreciable reduction in the average duration per case. The average number of sick daily remains approximately the same as in 1928 and has been a fairly constant figure since the beginning of these reports. The number of sick daily including cases of less than 48 hours duration was 24·1, and excluding 48-hour cases 23·0, compared with 24·3 and 23·2 in 1928. The average number of days sickness per head including and excluding 48 hour cases was 8·8 and 8·4, compared with 8·9 and 8·5 in 1928, and the average durations per case were 11·9 and 18·3 days compared with 12·7 and 19·7 respectively in 1928.

5. The total sickness in the force as a whole is analysed in table II, page 12, to show the number of cases by groups of disease and by injury and the percentage of total sickness which these cases constitute. The corresponding figures for the two previous periods are included in the table for purposes of comparison. The outstanding figure in the table is the proportion of

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sickness attributable to influenza. In 1929, 9·5 per cent. of sickness was due to this disease compared with 3·1 per cent. in 1928 and previous averages of 5·6 and 5·7. With this exception, the group percentage remains very constant throughout within small limits. Disease constituted 83·3 per cent. of the total sickness and injury 16·7 per cent. in 1929, compared with 81·6 and 18·4 in 1928 and averages over the two previous periods of 83·5 and 16·5, and 86·2 and 13·8 respectively—a slight tendency on the part of injury to increase progressively in its porportion of the total non-effectiveness.

6. Table III, page 13, analyses the total sickness to show the incidences of groups of diseases and injury at home and abroad, to compare them with the corresponding average figures for the earlier periods, and to show the average duration per case of these groups from year to year. In the group incidences, two groups call for comment—diseases caused by infection and diseases of the digestive system. The marked rise in the rate of the former at home is due almost entirely to cases of influenza and tonsillitis which rose from 292 and 595 in 1928 to 1,302 and 953 respectively in 1929. In the diseases ot the digestive system the rise in the rate was due chiefly to an increase in cases of hypertrophy of the tonsils. Abroad, the reduction in the incidence of diseases of the digestive system was due to a general reduction in the number of cases of the various diseases grouped under this heading rather than of any one or two diseases. The reduction in the rate abroad for diseases caused by infection is to be found on an all-round decrease in diseases under this heading with the exception of malaria, the incidence of which rose from 64·2 in 1928 to 74·2 in 1929, and of tonsillitis which rose from 31·3 to 41·8.

7. In the average duration per case section of the table there is little variation where the numbers of cases are considerable. Effects of parasites at home, and diseases of the lymphatic and ductless glands, show unduly high average durations but the cases were few in number and included one or two of unusually long duration.

Fleet Air Arm.

8. An analysis of the sickness which occurred in the Fleet Air Arm during 1929 is given in table I, page viii. The incidence of sickness, both including and excluding 48-hour cases, is the lowest recorded during the last three years prior to which no separate records were kept for this branch. The death rate and finally invaliding rate are both lower than in either of the previous years, but the invaliding rate from abroad to the United Kingdom rose from 9·2 and 11·4 to 13·6 in 1929. The number of sick daily, both including and excluding cases of less than 48 hours duration, was lower than during 1928 or 1927.

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Invalidings.

9. *Invalids from commands abroad to the United Kingdom.*—The rate of invaliding rose from 17·0 per 1,000 of strength in 1928 to 18·4 in 1929 but compares favourably with the rates for the two previous periods. The increase in the rate was largely due to cases of the enteric group from Iraq (31 cases compared with 15 in 1928). The diseases for which cases were transferred to home establishment were in order of frequency—results of injury, enteric group, psychoneurosis, diseases of the urinary system and pneumonia.

10. *Final invalids.*—Two hundred and thirty-eight cases were invalided out of the service, 224 for disease and fourteen for injury compared with 167 and 22 in 1928, and 185 and 21 in 1927. The principal causes in 1929 were :—

Psychoneurosis		25
Tuberculosis—		
Pulmonary	28	34
All other	6	
Valvular disease of the heart		24
Defective vision		10
Chronic suppurative otitis media		13
Mental diseases		10
Fractures		10
Diseases of joints		10

Compared with 1928 there were decreases in the numbers invalided for :—

Psychoneurosis	28 to 25
Defective vision	16 to 10
Fractures	16 to 10

and increases in :—

Tuberculosis—	
Pulmonary	19 to 28
Other	3 to 6
Valvular disease of the heart	10 to 24
Chronic suppurative otitis media	7 to 13
Mental diseases	11 to 13

The final invaliding rate rose to 7·6 in 1929 from 6·2 in 1928, but compares favourably with averages over the preceding periods of 7·5 and 11·6. The numbers of invalids in each group of diseases and injury are shown in table II, page 12, and their percentage of the total invalidings for 1929 is compared with the average figures for the two earlier periods. There is a marked decrease in the percentage of cases invalided for diseases of the eye and for diseases of the ear and nose, while the percentage of diseases of the circulatory system is double the average of each of the two previous periods.

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Deaths.

11. Table II, page 12, analyses the cases of death by groups of diseases and injury and shows against each group its percentage of the total deaths, and the average corresponding figures for the two previous periods for purposes of comparison. The causes of the 33 deaths from disease were as follows :—

Tuberculosis—	
Pulmonary	4
Acute miliary	1
Enteric group—	
Typhoid fever	3
Clinical enteric	1
Malaria	2
Pneumonia	2
Pyaemia	2
Endocarditis	2
Appendicitis	2
Effects of alcohol	2
Cerebro-spinal fever	1
Diphtheria	1
Valvular disease of the heart	1
Myocarditis	1
Anaemia (acute)	1
Pleurisy	1
Pemphigus	1
Nephritis	1
Urinary calculus (operative shock) ..	1
Gastric ulcer (perforated)	1
Abscess of liver	1
Lymphadenoma	1

There were 72 deaths from injury compared with 97 in 1928, and in 1928 there were forty deaths from disease compared with the 33 in 1929 enumerated above.

Age Groups.

12. The incidence of sickness, sub-divided into disease and injury at home and abroad and in the total force, is analysed by age groups in table V, page 15. All the rates abroad—injury, disease and total disabilities—are higher in each age group than those for the force at home with two exceptions, i.e., injury in the groups 22–23 and 35 and over. As in previous years, the highest disease incidence occurred in the youngest two groups of airmen, and it should be noted that none of the first group and very few of the second group of airmen serve abroad. On the whole, the tendency as shown by this table is for both disease and injury to decrease in the higher age groups, and it is worth remarking that, excluding the youngest two groups, the age group 22–23 has shown the highest sickness incidence for the last

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three years. Officers and cadets, who are combined into one group owing to the small numbers when divided by ages, show a higher injury rate both at home and abroad than any group of airmen, while their disease rate is only exceeded at home by the airman groups 22–23 and the youngest two under 18 and 18–19, and abroad by the groups 20–21 and 22–23.

Types of Unit.

13. An analysis by types of unit of the incidence of sickness, sub-divided into disease and injury, in the total force is given in table VIII, page 20. As is to be expected, the death incidence is highest in flying units and the sickness incidence lowest ; but on the other hand, the incidence of injury is highest among miscellaneous units and is only slightly higher in flying units than in the depôt group which includes technical schools and armoured car companies. These facts were noted in the figures for 1928.

Trade Groups.

14. The incidence of sickness by trade groups is shown in table IX, page 21 ; and in addition to the sub-division into disease and injury groups, disease is further analysed by those groups of diseases which were the chief causes of medical non-effectiveness during the year. The trade group of aircraft apprentices still, as in earlier years, shows the highest incidence, but there has been a reduction in the rate of upper air passage and digestive diseases compared with last year. The officer, cadet, and airman pilot group, which in 1928 showed the lowest but one incidence of sickness, showed the highest but one incidence in 1929 : the increased incidence was due to very considerable rises in the incidences of influenza and diseases of the digestive system from 19·3 and 40·0 in 1928 to 73·2 and 53·9 in 1929. A point which seems worthy of notice in this trade-grouping of disease is that in the only named disease group where the disability is the result of voluntary risk, *i.e.*, venereal diseases, the same trade groups have, during the last five years with the exception of 1926, shown the highest and lowest two incidences ; and there has been a remarkable constancy in the placing of the remaining groups during the whole of the period. In the excepted year, 1926, the trade group which in each other year showed the highest incidence dropped to second place.

Nosological Tables.

15. Sickness, deaths and invalids at home, abroad, and for the total force are analysed by their cause in the main nosological table XII, page 24, and certain diseases, marked with an asterisk in this table, which are responsible for the bulk of the total sickness are further analysed by commands in table VII, page 18. Figures for the Fleet Air Arm, which are shown separately in table I, are included in the home and abroad figures as appropriate in table XII.

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16. The principal causes of medical non-effectiveness, with their constantly sick figures, are tabulated below :—

	Number sick daily.			
	1929.		1928.	
Injuries :				
Fractures	66·3		68·9	
Sprains and dislocations ..	16·5		18·7	
Contusions and wounds ..	22·8		24·0	
Other injuries	34·9		32·9	
Total		140·5		144·5
Gonorrhœa		56·2		63·3
Tonsillitis		34·0		20·7
Influenza		31·7		11·4
Upper air passage infections (excluding tonsillitis).		24·2		27·8
Malaria		20·3		18·4
Appendicitis		19·3		20·5
Enteric group		15·6		12·0
Diseases of the joints		15·3		8·0
Cellulitis		14·4		16·0
Venereal disease (excluding gonorrhœa).		14·5		15·7
Impetigo contagiosa		10·4		13·8

17. Comparing the incidence of diseases by main commands, it is found that, estimating the medical non-effectiveness by the number of days sickness per head, the order of commands in medical effectiveness is—Mediterranean Littoral (which includes Egypt, Palestine and Aden) 7·2 days, the force at home 7·6 days, India 11·1 days, and Iraq 16·3 days. The part played by venereal disease as a cause of non-effectiveness is shown by the following figures :—

Home	0·6 days per head
India	0·9 ,, ,, ,,
Mediterranean Littoral	0·9 ,, ,, ,,
Iraq	2·7 ,, ,, ,,

while the main groups, dysentery, enteric, malaria and sandfly fever, show the following comparative figures in accounting for medical non-effectiveness abroad :—

	Mediterranean Littoral.	*Iraq.*	*India.*
Dysentery	0·1	0·6	0·2
Enteric group	0·1	1·3	1·0
Malaria, primary	0·2	0·5	1·0
,, other (including clinical).	0·1	0·3	0·9
Sandfly fever	0·2	0·6	0·4

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18. As has already been noted, the incidence of influenza at home rose from 13·1 in 1928 to 57·4 in 1929, though the average duration per case was reduced from 10·5 to 8·6 days. Infections of the upper air passages at home also rose from 69·4 per 1,000 in 1928 to 82·6 in 1929, and the increase in incidence was mainly due to cases of tonsillitis, 953 in 1929 compared with 595 in 1928 with a very similar average strength. The incidence of malaria was much higher in Iraq and India, and in particular in Iraq, during 1929 than during 1928, while in the Mediterranean Littoral a marked reduction in the incidence of the disease, 53·3 to 28·8 per 1,000, was effected.

Venereal Disease.

19. Venereal disease is analysed in table VI, page 16. The incidence of 15·0 per 1,000 is the lowest recorded since these reports were started, and is considered as very satisfactory. The incidence and number of sick daily per 1,000 of strength abroad are more than double those at home; the relative non-effectiveness due to this disease in the separate commands has been referred to in earlier paragraphs. The number of days sickness per head from this cause in the total force was 0·8 days in 1929 compared with 1·0 days in 1928 and 2·0 days in 1921. It is worthy of note that, as shown in table XII, page 29, the total of diseases of the generative system, excluding venereal disease, rose only from 8·5 per 1,000 in 1928 to 9·0 in 1929, and this rise was mainly due to cases of phimosis and those grouped as "other diseases," whereas the incidence of urethritis (non-venereal) fell from 3·9 per 1,000 in 1928 to 3·0 in 1929.

Pulmonary Tuberculosis.

20. Twenty-nine cases of pulmonary tuberculosis were notified during 1929, and of this number four remained over into 1930, 21 were invalided from the service and four died. Of the seven cases remaining over into 1929 from 1928, five were invalided from the service and two of the inviduals, who after nine months sanatorium treatment were reported to be clinically quiescent, relinquished their commissions during the year on account of ill health.

21. The incidence of pulmonary tuberculosis in the whole force during 1929 was 0·9 per 1,000 compared with 0·8 per 1,000 in 1927 and 1928; and an analysis of the 29 cases by age and trade groups, length of service and type of unit with which the individual was serving is given in table IV. A further analysis of the 1929 cases showed that in seven cases out of the twenty-nine there was a definite tubercular family history, in seven cases information on this point was not available and in fifteen it was definitely stated that to the best of the investigator's knowledge there was no history of tuberculosis in the family concerned.

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As regards previous illnesses which might be considered as likely precursors of pulmonary tuberculosis, ten had suffered from frequent attacks of catarrh in the upper air passages, eight from chronic cough, three from pleurisy and two from pneumonia. In one case there was a history of an earlier tubercular epididymitis and in five others the possibility of occupation as a factor in the onset was commented on. In two of these latter cases the individuals were in motor boat crews for three or four years and liable to repeated wettings, two worked in blacksmith's shops, and one had been employed on photographic work for more than ten years. The last case is further noteworthy in that additional to his long work in ill-ventilated dark rooms two of his immediate predecessors in the post developed tuberculosis of the lungs and a pupil who worked contemporarily with him was also invalided from the service for the same disability. Seven cases gave a history of hæmoptysis and five others of night sweats and wasting. In fourteen cases the individuals had served abroad, and of these four had histories of tropical diseases—two malaria, one dysentery and one heatstroke.

Injury.

22. Injuries are analysed in table X, page 22, by cause and nature. Cases of sickness due to heatstroke, sunstroke and heat exhaustion and to the wearing of ill-fitting boots are not included in this table as not being injuries for the purpose of this analysis. In the former classification there were during 1929 nine cases representing ninety days sickness with no deaths nor invalids, while in the latter group there were nineteen cases necessitating 162 days off duty with no deaths nor invalids.

23. The total number of cases of injury in 1929 was 2,359, an incidence of 75·7 per 1,000 of strength, compared with 2,364 or an incidence of 77·6 in 1928. Fifty-seven per cent. of all accidents occurred on duty, the same percentage as in 1928; and, as in previous years, the commonest site of injury was the lower limb.

24. Six per cent. of all injuries on and off duty were the result of flying accidents, compared with 6·6 per cent. in 1928, 6·4 in 1927, and 7·1 in 1926. Fifty-six per cent. of the total deaths from injury were the result of flying accidents, compared with 68 per cent. in 1928, 70 per cent. in 1927 and 73 per cent. in 1926.

25. *Injuries sustained in flying accidents.*—An analysis of flying casualties during 1929, 1928 and 1927 is given in table XI, page 23. There were fewer deaths from flying accidents during 1929 than in any one year since 1921, and more aircraft hours were flown per accident resulting in death or injury than in any previous year. The percentage of flying casualties resulting in death for 1929 was 28 compared with 41 in 1928 and 39 in 1927. Of the officers killed or injured as the result of flying accidents, all belonged to the general duties branch; and one death was the

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result of an accident off duty. Among airmen, there were fifty casualties—eighteen in the group of airman pilots qualified or under training, of which five resulted in death, and 32 in the following trades—aircrafthands, two; carpenters and riggers, four; W/T operators and meteorologists, four; fitters, thirteen; metalworkers, five; and air gunners, four; of which eleven proved fatal.

26. *Injuries caused by airscrews.*—There were 27 cases of injury due to this cause in which are included seven cases of personnel who were struck by the airscrew when not swinging, or who, when swinging, were not struck by the airscrew but sustained an injury such as sprained ankle, etc. These 27 cases represented a total of 1,841 days sickness, with an average duration per case ot 68 days. There were two deaths and two invalids as the result of these injuries, and the trade groups involved were—carpenters and riggers, thirteen; fitters, eight; W/T operators and meteorologists, four; airman pilots, one; officers, one. The deaths resulted from fractured skull, and from shock following a compound fracture of the left humerus, while the two invalids were discharged from the service for deformities resulting from fractured left femur and from fractured proximal phalanges of fourth and fifth fingers of the left hand.

27. *Injuries sustained while starting engines.*—Thirty-six cases of injury, compared with 41 in each of the previous years, representing 920 days sickness and an average duration per case of 26 days, were reported under this heading during 1929, and do not include those in the previous paragraph which occurred while starting aircraft engines. There were no deaths and no invalids.

28. *Injuries the result of motor accidents.*—A total of 431, compared with 498 in 1928, resulting in nineteen deaths, one on duty, and seven invalids, was reported during 1929. The death and invalid figures for 1928 were 22 and thirteen respectively. Injuries from this cause are analysed into four groups as follows:—

(i) *Motor cycles—occupants.*—Three hundred and thirty, or 77 per cent. of all motor accidents and fourteen per cent. of all injuries, occurred to riders of motor cycles. Thirteen cases occurred on duty, with no deaths and no invalids; while among the 317 cases off duty or on leave there were fourteen deaths and five invalids. In 1928, 81 per cent. of motor accidents and 17 per cent. of all cases of injury occurred to motor cyclists.

(ii) *Lorries or tenders—occupants.*—Twenty-five cases on duty, resulting in one death, and three cases off duty, one of which proved fatal, were reported during 1929. There were no invalids as the result of injury from this type of accident.

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(iii) *Motor cars—occupants.*—There were 37 cases of injury from this cause during 1929, five of which occurred on duty, three on leave and 29 off duty. Two cases proved fatal and two were invalided as the result of injuries, all four being cases which occurred off duty.

(iv) *Motor vehicles, all types—non-occupants.*—Thirty-six cases of injury sustained in motor accidents in which the individuals were not occupants of the vehicles, were reported; two of the accidents were caused by R.A.F., 27 by civilian, and seven by unknown, vehicles. Six of the injured were on duty at the time of the accident, 28 were off duty and two were on leave. There was one death, off duty, and no invalids.

29. *Injuries sustained in athletics.*—There was a slight rise in the number of cases and incidence of this type of injury in 1929—993 cases and an incidence of 31·9 per 1,000 compared with 946 and an incidence of 31·0 per 1,000 in 1928. On or off duty in athletics is determined by whether or not the game or exercise was organised by the service, and on this basis the 993 cases for 1929 are divided into 786 on duty, 170 off duty, seven on leave and thirty where no information was available as to whether on or off duty. One case of malformation following an injury sustained during an organised game of football was invalided from the service. Football, as in previous years, accounted for the majority of accidents under this heading, 66 per cent. compared with 68 per cent. in 1928 and 66 per cent. in 1927, and the commonest injuries were synovitis of the knee joint, 162 cases, and sprained ankle, 125 cases.

30. *Wounds in action.*—One airman, a wireless operator, was killed by rifle fire while flying in Iraq; while a second airman, one of the crew of an armoured car operating against hostile tribes in Palestine, was wounded by rifle fire.

31. *Accidental gunshot wounds.*—There were twelve cases with one death and no invalids during 1929.

32. *Injuries sustained during voluntary parachute descents.*—There were no injuries during practice descents in 1929, and any which occurred as the result of forced descents have been included under flying accidents.

33. *Injuries caused by animals.*—Five cases of injury resulting from bites by dogs and one from stinging by wasps were reported. There were no deaths and no invalids.

34. *Injuries sustained in workshops.*—Forty-two cases with no deaths and no invalids occurred during the year, compared with 53 and one death and no invalids in 1928.

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35. *Other injuries.*—Six hundred and seventy cases of injury, which it is not possible to classify under the preceding paragraphs, were reported during the year and are divided below into "on duty," "off duty or on leave," and "incomplete in detail."

On duty.—Two hundred and sixty-one cases, with no deaths and no invalids.

Off duty or on leave.—Three hundred and seventy-two cases, with nine deaths and no invalids.

Incomplete in detail.—Thirty-seven cases with no deaths and no invalids.

Included in the nine deaths among cases off duty or on leave are two suicides and one case of drowning in which the coroner returned an open verdict. Of the remaining six, four were cases of accidental drowning, one a death from fractured skull the result of misadventure, and one a fatal fractured base of skull the result of a fall from a bicycle.

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Table II.—Sickness, Deaths and Invalids.

Disease group.	1929.			Percentage of total.								
				Cases.			Deaths.			Invalids.		
	Cases.	Deaths.	Invalids.	1929.	1925-8.	1921-4.	1929.	1925-8.	1921-4.	1929.	1925-8.	1921-4.
Dysentery	68	—	—	0·5	1·0	1·4	—	0·2	0·4	—	—	0·2
Enteric group ..	48	4	—	0·3	0·3	0·2	3·8	3·0	1·9	—	—	—
Influenza	1,368	—	—	9·5	5·6	5·7	—	0·4	0·2	—	—	—
Malaria	666	2	—	4·6	7·7	6·5	1·9	1·3	0·8	—	0·2	0·1
Pneumonia ..	67	2	1	0·5	0·4	0·5	1·9	3·2	6·0	0·4	—	—
Pyrexia of unknown origin	50	—	—	0·3	0·3	0·8	—	—	0·2	—	—	—
Sandfly fever ..	420	—	—	2·9	4·5	8·3	—	—	—	—	—	—
Tuberculosis ..	35	5	34	0·2	0·3	0·4	4·7	3·9	3·7	14·3	12·2	14·2
Venereal diseases ..	466	—	—	3·3	4·1	5·7	—	—	—	—	0·2	1·2
Pyæmia and septicæmia	5	2	—	0·0	0·0	0·0	1·9	1·6	2·5	—	—	—
Other diseases due to infection	4,318	2	4	30·1	27·8	25·2	1·9	1·1	1·7	1·7	2·8	1·7
Contacts and carriers	89	—	1	0·6	0·4	0·4	—	—	—	0·4	—	0·1
Nervous system and brain	230	—	55	1·6	1·8	2·1	—	2·7	2·1	23·1	25·7	24·8
Eye	133	—	14	0·9	1·1	1·1	—	—	—	5·9	10·5	7·2
Ear and nose ..	311	—	14	2·2	1·8	1·9	—	0·2	—	5·9	10·6	11·6
Circulatory system	156	5	39	1·1	1·1	1·3	4·7	2·7	2·7	16·4	8·1	8·2
Lymphatic system..	13	—	8	0·1	0·1	0·1	—	—	0·2	3·4	1·0	1·1
Respiratory system (excluding tuberculosis and pneumonia)	464	1	9	3·2	3·0	2·8	1·0	0·2	1·5	3·8	3·8	4·1
Teeth and gums ..	79	—	—	0·6	0·6	0·6	—	—	—	—	0·2	0·1
Digestive system ..	1,257	4	6	8·8	8·6	7·3	3·8	5·6	4·4	2·5	3·4	3·6
Disorders of nutrition and metabolism	10	—	1	0·1	0·0	0·0	—	0·2	0·2	0·4	0·6	0·5
Generative system..	280	—	1	2·0	1·9	1·6	—	—	—	0·4	0·2	0·1
Organs of locomotion	382	—	24	2·7	2·9	2·8	—	—	—	10·1	8·1	11·9
Areolar tissue and skin	682	1	3	4·8	5·8	6·7	1·0	—	—	1·2	0·6	1·3
Urinary organs ..	99	2	6	0·7	0·7	0·5	1·9	0·5	0·8	2·5	2·3	2·9
Tumours and cysts	54	1	4	0·4	0·5	0·5	1·0	1·3	1·2	1·7	0·1	0·6
Poisons	56	2	—	0·4	0·3	0·3	1·9	1·1	0·8	—	—	0·1
Debility	32	—	—	0·2	0·3	0·6	—	—	—	—	0·3	0·2
Other diseases ..	98	—	—	0·7	0·6	0·8	—	—	—	—	0·1	0·1
Total: all diseases	11,936	33	224	83·3	83·5	86·2	31·4	29·2	31·3	94·1	91·0	96·0
Total: all injuries	2,387	72	14	16·7	16·5	13·8	68·6	70·8	68·7	5·9	9·0	4·0
Total: all disabilities	14,323	105	238	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0

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TABLE III.—SICKNESS AT HOME AND ABROAD, ANALYSED BY DISEASE AND INJURY GROUPS.

Disease group.	Case incidence per 1,000 of strength.									Average duration of each case (days).								
	Home.			Abroad.			Total force.			Home.			Abroad.			Total force.		
	1929.	Average 1925–28.	Average 1921–24.	1929.	Average 1925–28.	Average 1921–24.	1929.	Average 1925–28.	Average 1921–24.	1929.	Average 1925–28.	Average 1921–24.	1929.	Average 1925–28.	Average 1921–24.	1929.	Average 1925–28.	Average 1921–24.
Diseases caused by infection ..	202·4	166·5	176·6	344·7	407·9	500·8	241·1	233·1	226·3	14·1	15·9	17·2	15·9	15·2	15·8	14·8	15·6	16·5
Contacts and carriers	3·7	2·5	2·1	0·7	0·7	0·9	2·9	2·0	1·8	16·3	14·5	11·1	19·8	15·9	19·5	16·5	14·6	12·3
Effects of parasites	0·9	0·6	0·6	2·7	2·3	2·5	1·4	1·0	1·1	37·3	16·6	6·3	18·8	25·1	20·6	27·4	21·6	15·2
Diseases of nervous system and brain	6·3	6·5	9·3	10·3	11·5	12·6	7·4	7·9	10·2	39·4	37·4	29·4	33·4	52·3	54·7	37·1	43·4	38·0
Diseases of the eye	3·7	4·5	5·3	5·8	5·2	5·6	4·3	4·7	5·4	17·8	20·1	18·3	17·1	30·2	33·0	17·5	23·2	22·5
Diseases of the ear and nose ..	9·1	6·1	8·7	12·3	13·5	9·9	10·0	8·1	9·0	19·6	22·5	20·7	14·5	22·6	22·6	17·9	22·5	21·2
Diseases of the circulatory system	4·8	3·9	4·7	5·5	7·0	9·8	5·0	4·8	6·1	44·8	37·7	24·3	28·9	39·2	48·4	40·0	38·3	35·0
Diseases of the lymphatic and ductless glands	0·5	0·4	0·3	0·1	0·3	0·3	0·4	0·4	0·3	88·5	49·0	39·0	113·0	71·4	45·7	90·4	54·8	41·1
Diseases of the respiratory system	14·4	12·5	12·8	16·3	16·3	16·0	14·9	13·6	13·7	18·6	18·4	17·5	16·1	18·3	20·4	17·9	18·4	18·4
Diseases of the teeth and gums ..	2·5	2·8	2·8	2·6	2·7	3·5	2·5	2·8	3·0	10·0	10·1	9·5	17·6	10·5	10·0	12·1	10·2	9·6
Diseases due to disorders of nutrition or metabolism	0·4	0·2	0·2	—	0·3	0·1	0·3	0·2	0·2	20·6	31·6	31·3	—	38·3	17·5	21·4	34·2	29·8
Diseases of the digestive system	40·6	34·6	28·9	39·8	48·9	53·3	40·3	38·6	35·6	20·7	22·1	20·4	19·2	19·5	17·7	20·3	21·2	19·2
Diseases of the generative system	7·2	7·0	6·5	13·7	13·2	10·4	9·0	8·7	7·6	25·3	24·7	19·2	22·9	20·8	20·2	24·3	23·1	19·6
Diseases of the organs of locomotion	11·9	11·9	13·3	13·1	15·9	15·0	12·3	13·0	13·5	29·1	21·7	17·8	28·8	18·7	20·7	29·0	20·7	18·7
Diseases of the areolar tissue and skin	21·2	26·8	35·9	23·8	23·4	23·5	21·9	25·9	32·5	17·6	18·6	16·1	20·0	16·1	17·0	18·3	17·9	16·3
Diseases of the urinary organs ..	2·6	2·2	2·4	4·8	5·0	3·2	3·2	3·0	2·6	37·1	32·1	31·2	44·5	33·6	46·5	40·2	32·8	36·4
Tumours and cysts	1·5	2·4	2·6	2·2	2·6	2·6	1·7	2·5	2·6	23·3	18·3	18·0	41·8	24·7	25·1	29·8	20·2	20·0
Poisons	0·7	0·5	1·0	4·8	3·6	3·2	1·8	1·4	1·6	17·3	10·3	6·7	13·2	13·4	13·4	14·3	12·5	10·4
All other diseases	2·4	2·3	4·7	3·8	5·3	8·9	2·8	3·1	5·9	11·6	14·0	11·0	17·1	15·6	22·0	13·6	14·7	15·6
Total, all diseases	336·8	294·3	318·7	507·1	585·7	682·0	383·1	374·7	419·3	17·5	18·5	17·9	17·8	17·5	17·9	17·6	18·1	17·9
General injuries	8·7	7·2	4·7	8·0	10·1	18·3	8·5	8·0	8·5	29·9	21·4	16·1	29·2	18·6	15·1	29·7	20·4	15·5
Local injuries	64·1	62·1	55·2	78·6	75·5	68·0	68·1	65·8	58·8	21·5	22·6	19·2	18·1	18·8	20·6	20·5	21·4	19·7
Total, all injuries..	72·9	69·3	59·9	86·6	85·6	86·3	76·6	73·8	67·2	22·5	22·5	19·0	19·1	18·7	19·4	21·5	21·3	19·1
Total, all disabilities	409·7	363·6	378·6	593·7	671·3	768·6	459·7	448·5	486·5	18·4	19·3	18·1	18·0	17·6	18·1	18·3	18·6	18·1

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TABLE IV.—PULMONARY TUBERCULOSIS.

Age.	No. of cases.			Incidence per 1,000 of strength.	Trade group.	No. of cases.	Incidence per 1,000 of strength.	Length of service.	No. of cases.	Incidence per 1,000 of strength.	Type of unit.	No. of cases.	Incidence per 1,000 of strength.
	Home.	Abroad.	Total.										
Under 20 ..	5	—	5	0·9	Officers, cadets and airman pilots.	1	0·3	Under 1 year ..	1	0·3	Flying units ..	14	0·9
20–24 ..	3	2	5	0·4	Aircrafthands ..	4	0·6	1 year and under 5 years.	6	0·6	Depôts	12	1·2
25–29 ..	8	—	8	1·0	Aircraft apprentices.	3	1·0	5 years and under 10 years.	10	0·8	Miscellaneous ..	3	0·6
30–34 ..	3	2	5	1·6	Clerks	3	1·1	10 years and over	12	2·8			
35–39 ..	4	—	4	2·4	Drivers	2	1·0						
40–44 ..	2	—	2	2·3	Metal workers ..	2	0·8						
45 and over..	—	—	—	—	Carpenters and riggers.	3	0·8						
					Fitters	8	2·0						
					Other skilled trades	3	0·9						
Total ..	25	4	29	0·9		29	0·9		29	0·9		29	0·9

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TABLE V.—DISEASE AND INJURY ANALYSED BY AGE GROUPS.

Age last birthday.	Average strength.			Case incidence per 1,000 of strength.								
				Disease.			Injury.			All disabilities.		
	Home.	Abroad.	Total.	Home.	Abroad.	Total.	Home.	Abroad.	Total.	Home.	Abroad.	Total.
Airmen—												
Under 18	1,927	—	1,927	552·6	—	552·6	48·3	—	48·3	600·9	—	600·9
18 and 19	3,265	90	3,355	358·3	*	360·1	83·3	*	83·4	441·6	*	443·5
20 and 21	3,339	1,002	4,341	330·9	549·9	381·5	90·4	96·8	91·9	421·3	646·7	473·4
22 and 23	2,389	2,134	4,523	349·1	536·1	437·3	91·3	86·2	88·9	440·4	622·3	526·2
24 and 25	2,242	1,590	3,832	310·9	495·6	387·5	78·0	93·1	84·3	388·9	588·7	471·8
26 and 27	2,271	884	3,155	302·1	520·4	363·2	61·2	88·2	68·8	363·3	608·6	432·0
28 and 29	1,804	639	2,443	297·7	467·9	342·2	62·1	90·8	69·6	359·8	558·7	411·8
30 to 34	1,779	725	2,504	232·7	448·3	295·2	38·8	69·0	47·5	271·5	517·3	342·7
35 and over	1,210	460	1,670	230·6	430·4	285·6	37·2	32·6	35·9	267·8	463·0	321·5
Total—Airmen	20,226	7,524	27,750	335·6	505·4	381·6	70·4	84·8	74·4	406·0	590·2	456·0
Total—Officers and cadets ..	2,459	950	3,409	346·9	520·0	395·2	92·7	101·1	95·0	439·6	621·1	490·2
Total—All ranks	22,685	8,474	31,159	336·8	507·1	383·1	72·9	86·6	76·6	409·7	593·7	459·7

* Not calculated.

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TABLE VI.—VENEREAL DISEASE.

Disease.	Home.				Abroad.				Total Force.			
	No. of cases.	Case incidence per 1,000 of strength	Average.		No. of cases.	Case incidence per 1,000 of strength	Average.		No. of cases.	Case incidence per 1,000 of strength	Average.	
			No. sick daily.	Duration of case (days).			No. sick daily.	Duration of case (days).			No. sick daily.	Duration of case (days).
Gonorrhœa—acute ..	202	8·9	29·5	53·3	121	14·3	21·1	63·7	323	10·4	50·6	57·2
relapse ..	11	0·5	2·6	87·8	16	1·9	3·0	67·6	27	0·9	5·6	75·9
Total ..	213	9·4	32·1	55·1	137	16·2	24·1	64·2	350	11·3	56·2	58·6
Syphilis—admissions :												
Primary	16	0·7	2·7	61·2	30	3·5	2·6	32·3	46	1·5	5·3	42·3
Secondary	2	0·1	0·4	72·0	4	0·5	0·3	24·8	6	0·2	0·7	40·5
Tertiary	1	0·0	0·1	20·0	—	—	—	—	1	0·0	0·1	20·0
For further treatment	12	0·5	2·1	63·9	4	0·5	0·4	34·5	16	0·5	2·5	56·6
Total	31	1·3	5·3	61·6	38	4·5	3·3	31·7	69	2·2	8·6	45·2
Soft chancre	6	0·3	0·4	26·8	41	4·8	5·5	48·9	47	1·5	5·9	46·1
Total, Venereal disease 1929	**250**	**11·0**	**37·8**	**55·2**	**216**	**25·5**	**32·9**	**55·6**	**466**	**15·0**	**70·7**	**55·4**
1928	*302*	*13·5*	*44·6*	*54·0*	*254*	*31·3*	*34·4*	*49·6*	*556*	*18·2*	*79·0*	*52·0*
1927	*269*	*12·5*	*40·8*	*55·4*	*259*	*30·1*	*31·6*	*44·6*	*528*	*17·5*	*72·4*	*50·1*
1926	*357*	*14·9*	*59·5*	*60·8*	*208*	*23·0*	*31·8*	*55·9*	*565*	*17·1*	*91·3*	*59·0*
1925	*400*	*16·8*	*57·0*	*52·0*	*256*	*27·9*	*36·4*	*51·9*	*656*	*19·9*	*93·4*	*51·9*
1924	*432*	*19·2*	*59·3*	*50·3*	*272*	*30·0*	*44·0*	*59·2*	*704*	*22·3*	*103·3*	*53·8*
1923	*482*	*23·8*	*64·8*	*49·1*	*299*	*31·4*	*42·3*	*51·7*	*781*	*26·2*	*107·2*	*50·1*
1922	*525*	*24·9*	*76·1*	*52·9*	*263*	*33·5*	*34·4*	*47·7*	*788*	*27·2*	*110·5*	*51·2*
1921	*709*	*32·3*	*94·2*	*48·5*	*314*	*49·2*	*52·2*	*60·7*	*1,023*	*36·1*	*146·4*	*52·2*

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TABLE VII.—DETAILED NOSOLOGICAL TABLE OF

Disease.	Home. Average strength, 22,685. (Includes Fleet Air Arm at Home).				Mediterranean Littoral. Average strength, 3,574.			
	No. of cases.	Case incidence per 1,000 of strength.	Average. No. sick daily	Average. Duration of case.	No. of cases.	Case incidence per 1,000 of strength.	Average. No. sick daily	Average. Duration of case.
Diseases caused by Infection.				Days.				Days.
Dysentery—								
Clinical, primary ..	—	—	—	—	4	1·1	0·2	21·5
,, recurrent ..	—	—	—	—	1	0·3	0·0	3·0
Bacillary, primary ..	—	—	—	—	6	1·7	0·7	45·0
,, recurrent ..	—	—	—	—	—	—	—	—
Amœbic, primary ..	—	—	—	—	4	1·1	0·3	30·0
,, recurrent ..	3	0·1	0·4	47·0	—	—	—	—
Total—Dysentery ..	3	0·1	0·4	47·0	15	4·2	1·3	31·9
Enteric Group—								
Typhoid fever	—	—	—	—	3	0·8	0·4	44·0
Paratyphoid fever, A & B	1	0·0	0·3	92·0	2	0·6	0·4	69·5
Clinical enteric	—	—	—	—	4	1·1	0·4	40·0
Enteritis	96	4·2	1·9	7·2	77	21·5	1·5	7·0
Influenza	1,302	57·4	30·6	8·6	32	9·0	0·5	5·8
Malaria—								
Clinical, primary.. ..	—	—	—	—	18	5·0	0·4	9·1
,, recurrent ..	8	0·4	0·3	11·8	6	1·7	0·1	8·5
Benign tertian, primary..	—	—	—	—	43	12·0	1·5	13·0
,, ,, recurrent	28	1·2	1·2	15·3	23	6·4	0·6	10·1
Malignant tertian, primary	—	—	—	—	13	3·6	0·4	11·5
,, ,, recurrent	1	0·0	0·1	37·0	—	—	—	—
Total—Malaria	37	1·6	1·5	15·1	103	28·8	3·2	11·2
Pyrexia of unknown origin..	19	0·8	0·6	11·0	15	4·2	0·3	6·3
Sandfly fever	—	—	—	—	113	31·6	1·7	5·4
Tuberculosis	28	1·2	7·0	90·8	5	1·4	1·1	81·4
Upper air passage infections	1,874	82·6	44·3	8·6	240	67·2	4·2	6·3
Venereal disease	250	11·0	37·8	55·2	63	17·6	8·8	51·1
Other diseases caused by infection	980	43·2	52·3	19·5	185	51·8	7·0	13·9
Total—All diseases caused by infection ..	4,590	202·4	176·8	14·1	857	239·8	30·6	13·1
All other diseases ..	3,049	134·4	190·5	22·8	557	155·8	27·7	18·1
Total—All diseases ..	7,639	336·8	367·2	17·5	1,414	395·6	58·4	15·1
Injuries—								
General injuries	198	8·7	16·2	29·9	27	7·6	1·9	25·6
Local injuries	1,455	64·1	85·9	21·5	272	76·1	10·3	13·8
Total—All injuries ..	1,653	72·9	102·1	22·5	299	83·7	12·2	14·8
Total—All disabilities..	9,292	409·7	469·3	18·4	1,713	479·3	70·6	15·0

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Diseases caused by Infection.

Iraq. Average strength, 2,273.				India. Average strength, 2,101.				Total Force. Average strength, 31,159.			
No. of cases	Case incidence per 1,000 of strength.	Average.		No. of cases.	Case incidence per 1,000 of strength.	Average.		No. of cases.	Case incidence per 1,000 of strength.	Average.	
		No. sick daily.	Duration of case.			No. sick daily	Duration of case.			No. sick daily	Duration of case.
			Days.				Days.				Days.
—	—	—	—	1	0·5	0·0	15·0	5	0·2	0·3	20·2
—	—	—	—	—	—	—	—	1	0·0	0·0	3·0
7	3·1	0·5	25·0	15	7·1	0·7	16·5	28	0·9	1·9	24·8
—	—	—	—	—	—	—	—	—	—	—	—
20	8·8	3·0	55·6	2	1·0	0·2	30·0	27	0·9	3·7	50·1
2	0·9	0·2	38·5	2	1·0	0·2	32·5	7	0·2	0·8	40·4
29	12·8	3·7	47·1	20	9·5	1·1	19·4	68	2·2	6·7	35·8
5	2·2	3·2	232·6	8	3·8	2·2	99·2	16	0·5	6·0	135·9
7	3·1	2·7	139·3	5	2·4	1·6	117·2	15	0·5	4·9	119·5
5	2·2	2·1	149·8	8	3·8	2·3	103·2	17	0·5	4·8	102·1
184	81·0	3·9	7·7	85	40·5	1·8	7·9	453	14·5	9·2	7·4
3	1·3	0·1	15·7	17	8·1	0·3	5·9	1,368	43·9	31·8	8·5
28	12·3	1·0	12·4	36	17·1	1·1	10·9	83	2·7	2·5	11·0
9	4·0	0·2	7·9	30	14·3	0·7	8·5	53	1·7	1·3	8·9
21	9·2	1·0	16·9	139	66·2	3·9	10·3	205	6·6	6·5	11·5
10	4·4	0·4	14·6	100	47·6	2·5	9·0	162	5·2	4·8	10·8
53	23·3	2·0	13·5	56	26·7	1·7	11·1	122	3·9	4·1	12·2
13	5·7	0·4	10·1	27	12·9	0·8	10·3	41	1·3	1·2	10·9
134	59·0	4·8	13·2	388	184·7	10·6	10·0	666	21·4	20·3	11·2
15	6·6	0·3	7·6	—	—	—	—	50	1·6	1·2	8·5
189	83·2	3·9	7·6	117	55·7	2·4	7·5	420	13·5	8·0	7·0
1	0·4	0·3	93·0	1	0·5	0·2	82·0	35	1·2	8·6	89·2
266	117·0	6·2	8·5	127	60·4	3·0	8·7	2,536	81·4	58·2	8·4
93	40·9	16·5	64·9	31	14·8	4·9	58·3	466	15·0	70·7	55·4
136	59·8	9·8	26·4	72	34·3	3·2	16·2	1,401	45·0	73·7	19·2
1,067	469·4	57·5	19·8	879	418·4	33·7	14·0	7,511	241·1	304·0	14·7
404	177·7	30·4	27·5	348	165·6	19·4	20·4	4,425	142·0	272·5	22·5
1,471	647·2	88·0	21·8	1,227	584·0	53·1	15·8	11,936	383·1	576·5	17·6
21	9·2	2·1	36·1	8	3·8	1·1	51·5	266	8·5	21·7	29·7
156	68·6	11·6	27·1	196	93·3	9·7	18·1	2,121	68·1	118·9	20·5
177	77·9	13·7	28·2	204	97·1	10·8	19·4	2,387	76·6	140·5	21·5
1,648	725·0	101·6	22·5	1,431	681·0	63·9	16·3	14,323	459·7	717·0	18·3

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TABLE VIII.—SICKNESS IN DIFFERENT TYPES OF UNIT.

Type of unit.	——	Home.					Abroad.					Total.				
		Incidence per 1,000 of strength.				Average duration of case. (days.)	Incidence per 1,000 of strength.				Average duration of case. (days.)	Incidence per 1,000 of strength.				Average duration of case. (days.)
		Cases.	Deaths.	Invalided out of service.	No. sick daily.		Cases.	Deaths.	Invalided out of service.	No. sick daily.		Cases.	Deaths.	Invalided out of service.	No. sick daily.	
Flying units ..	Disease	223·9	0·5	6·1	9·9	16·2	472·3	2·0	3·0	22·1	17·0	287·5	0·9	5·3	13·0	16·6
	Injury	72·9	3·6	0·9	4·5	22·6	89·7	3·8	0·3	4·8	19·7	77·2	3·7	0·7	4·6	21·7
	Total	296·8	4·1	7·0	14·4	17·8	562·0	5·8	3·3	26·9	17·5	364·7	4·6	6·0	17·6	17·6
Depôts (store and repair), ground schools and armoured car companies.	Disease	434·3	1·0	11·2	23·3	19·6	448·9	2·2	1·9	22·2	18·1	438·8	1·3	8·3	23·0	19·1
	Injury	68·3	1·1	0·1	4·4	23·5	76·3	0·9	0·3	4·0	19·1	70·8	1·1	0·2	4·3	22·1
	Total	502·6	2·1	11·3	27·7	20·1	525·2	3·1	2·2	26·2	18·2	509·6	2·4	8·5	27·3	19·5
Miscellaneous units, headquarters, personnel depôts, etc.	Disease	488·1	0·8	13·0	21·4	16·0	762·1	1·6	3·1	39·1	18·7	554·6	1·0	10·6	25·7	16·9
	Injury	81·0	1·0	0·3	4·7	21·0	103·3	—	—	5·0	17·6	86·5	0·8	0·2	4·7	20·0
	Total	569·1	1·8	13·3	26·1	16·7	865·4	1·6	3·1	44·1	18·6	641·1	1·8	10·8	30·4	17·3
Total	Disease	336·8	0·7	8·9	16·2	17·5	507·1	2·0	2·6	24·7	17·8	383·1	1·1	7·2	18·5	17·6
	Injury	72·9	2·4	0·5	4·5	22·5	86·6	2·1	0·2	4·5	19·1	76·6	2·3	0·4	4·5	21·5
	Total	409·7	3·1	9·4	20·7	18·4	593·7	4·1	2·8	29·2	18·0	459·7	3·4	7·6	23·0	18·3

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TABLE IX.—INCIDENCE OF CERTAIN DISEASES IN THE VARIOUS TRADE GROUPS.

Trade group.	Incidence per 1,000 of strength.								
	Influenza	Upper air passage infections.	Venereal diseases.	Respiratory diseases.	Digestive diseases.	All other diseases.	All diseases.	All injuries.	All disabilities.
Aircrafthands	55·9	87·0	20·1	15·9	38·9	175·3	393·1	67·7	460·8
Aircraft apprentices ..	35·2	164·8	0·3	11·1	53·3	234·5	499·2	55·6	554·8
Carpenters and riggers ..	28·2	70·0	11·9	15·0	41·8	183·2	350·1	99·4	449·5
Clerks	45·1	60·7	19·5	13·8	36·6	197·0	372·7	47·2	419·9
Drivers	29·0	62·5	26·1	17·2	29·5	219·6	384·0	85·2	469·2
Fitters	36·1	78·9	13·8	10·3	31·7	187·4	358·3	98·6	456·9
Metal workers	33·4	70·1	20·3	15·6	34·6	183·0	357·0	76·9	433·9
Officers, cadets and airman pilots	73·2	62·9	6·3	16·9	53·9	168·5	381·6	98·0	479·6
Other skilled trades.. ..	38·1	68·3	18·1	18·7	39·3	171·0	353·5	57·1	410·6
Total force	43·9	81·4	15·0	14·9	40·3	187·6	383·1	76·6	459·7

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TABLE X.—INJURIES.

—	Number of cases.							
	Airscrew.	Athletics.	Flying.	Motor transport.	Starting motor engines.	Other causes.	Total.	Percentage of total cases.
On duty	27	786	139	49	33	315	1,349	57
Off duty	—	177	1	382	3	377	940	40
Not stated	—	30	—	—	—	40	70	3
Total	27	993	140	431	36	732	2,359	100
Nature of injury:								
General	2	13	80	112	—	50	257	11
Head or face ..	1	53	36	131	1	115	337	14
Trunk	—	55	3	9	1	46	114	5
Upper extremity .	17	125	8	66	34	170	420	18
Lower extremity .	7	747	13	113	—	351	1,231	52
Total	27	993	140	431	36	732	2,359	100
Deaths:								
On duty	2	—	39	1	—	1	43	60
Off duty	—	—	1	18	—	10	29	40
Total	2	—	40	19	—	11	72	100

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Table XI.—Flying Casualties on Duty.

Rank.	Number of casualties.		
	1927.	1928.	1929.
Officers.			
Killed	*32*	*36*	23
Injured	*44*	*45*	62
Cadets.			
Killed	*2*	*1*	—
Injured	*1*	*3*	4
Airmen.			
Killed	*18*	*28*	16
Injured	*36*	*44*	34
Total, all ranks.			
Killed	*52*	*65*	39
Injured	*81*	*92*	100
Total	*133*	*157*	139
Deaths as a percentage of total flying casualties ..	*39*	*41*	28
Average duration of each case (days) :—			
Deaths included	*27*	*23*	33
Deaths excluded	*45*	*40*	46

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TABLE XII.—NOSOLOGICAL TABLE FOR HOME, ABROAD, AND TOTAL FORCE, 1929

Disease.	Home. Average strength, 22,685.						Abroad. Average strength, 8,474.							Total force. Average strength, 31,159.					
	No. of cases.	No. of deaths.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages. No. sick daily.	Averages. Duration of case.	No. of cases.	No. of deaths.	No. invalided to United Kingdom.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages. No. sick daily.	Averages. Duration of case.	No. of cases.	No. of deaths.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages. No. sick daily.	Averages. Duration of case.
Diseases caused by infection.						Days.							Days.						Days.
Diphtheria	49	—	—	2·2	4·9	36·8	7	1	—	—	0·8	0·9	45·9	56	1	—	1·8	5·8	37·9
*Dysentery	3	—	—	0·1	0·4	47·0	65	—	3	—	7·7	6·3	35·3	68	—	—	2·2	6·7	35·8
*Enteric group	1	—	—	0·0	0·3	104·0	47	4	31	—	5·5	15·3	119·1	48	4	—	1·5	15·6	118·8
*Enteritis (acute) and gastro-enteritis (acute)	96	—	—	4·2	1·9	7·2	357	—	—	—	42·1	7·3	7·5	453	—	—	14·5	9·2	7·4
*Influenza (including influenzal pneumonia)	1302	—	—	57·4	30·6	8·6	66	—	—	—	7·8	1·1	6·3	1368	—	—	43·9	31·7	8·5
Leishmaniasis	6	—	—	0·3	0·7	40·7	6	—	1	—	0·7	1·0	59·3	12	—	—	0·4	1·6	50·0
*Malaria	37	—	—	1·6	1·5	15·1	629	2	—	—	74·2	18·8	10·9	666	2	—	21·4	20·3	11·2
Measles	9	—	—	0·4	0·5	19·1	1	—	—	—	0·1	0·0	12·0	10	—	—	0·3	0·5	18·4
Mumps	18	—	—	0·8	1·2	23·4	2	—	—	—	0·2	0·1	23·0	20	—	—	0·6	1·3	23·4
Pneumonia	50	—	1	2·2	5·6	40·8	17	2	6	—	2·0	2·8	60·9	67	2	1	2·2	8·4	45·9
*Pyrexia of unknown origin	19	—	—	0·8	0·6	11·0	31	—	—	—	3·7	0·6	7·0	50	—	—	1·6	1·2	8·5
Rheumatism (acute)	73	—	—	3·2	7·9	39·7	8	—	—	—	0·9	0·6	27·1	81	—	—	2·6	8·5	38·5
Rubella	81	—	—	3·6	3·8	17·1	1	—	—	—	0·1	0·0	14·0	82	—	—	2·6	3·8	17·0
*Sandfly fever	—	—	—	—	—	—	420	—	—	—	49·6	8·0	7·0	420	—	—	13·5	8·0	7·0
Scarlet fever	32	—	—	1·4	3·9	44·9	1	—	—	—	0·1	0·1	32·0	33	—	—	1·1	4·0	44·5
Tuberculosis.																			
Respiratory	25	4	25	1·1	4·1	60·5	4	—	2	3	0·5	0·7	66·0	29	4	28	0·9	4·9	61·2
Other	3	—	5	0·1	2·8	343·0	3	1	2	1	0·4	0·9	106·0	6	1	6	0·2	3·7	224·5
*TOTAL—TUBERCULOSIS	28	4	30	1·2	7·0	90·8	7	1	4	4	0·8	1·6	83·1	35	5	34	1·2	8·6	89·2

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Acute upper air passage infections.																			
Laryngitis	47	—	—	2·1	1·4	11·1	5	—	—	—	0·6	0·1	5·4	52	—	—	1·7	1·5	10·6
Pharyngitis and naso-pharyngitis	801	—	—	35·3	16·2	7·4	285	—	—	—	33·6	4·9	6·2	1,086	—	—	34·9	21·1	7·1
Rhinitis, acute catarrhal	73	—	—	3·2	1·2	6·2	18	—	—	—	2·1	0·3	6·9	91	—	—	2·9	1·6	6·4
Tonsillitis (including quinsy and Vincent's angina)	953	—	—	42·0	25·4	9·7	354	—	—	—	41·8	8·6	8·9	1,307	—	—	41·9	34·0	9·5
*TOTAL—UPPER AIR PASSAGE INFECTIONS ..	1,874	—	—	82·6	44·3	8·6	662	—	—	—	78·1	13·9	7·6	2,536	—	—	81·4	58·2	8·4
Vaccinia	104	—	—	4·6	2·0	6·9	—	—	—	—	—	—	—	104	—	—	3·3	2·0	6·9
Venereal disease.																			
Gonorrhœa	213	—	—	9·4	32·1	55·1	137	—	2	—	16·2	24·1	64·2	350	—	—	11·3	56·2	58·6
Syphilis	31	—	—	1·3	5·3	61·6	38	—	—	—	4·5	3·3	31·7	69	—	—	2·2	8·5	45·2
Soft chancre	6	—	—	0·3	0·4	26·8	41	—	1	—	4·8	5·5	48·9	47	—	—	1·5	5·9	46·1
*TOTAL—VENEREAL DISEASES	250	—	—	11·0	37·8	55·2	216	—	3	—	25·5	32·9	55·6	466	—	—	15·0	70·7	55·4
Abscess, hand and finger	19	—	—	0·8	0·6	12·2	6	—	—	—	0·7	0·3	18·8	25	—	—	0·8	0·9	13·8
Abscess, other	55	—	—	2·4	2·3	15·0	9	—	1	—	1·1	0·7	29·4	64	—	—	2·1	3·0	17·0
Boils	103	—	—	4·5	2·5	8·9	54	—	—	—	6·4	1·7	11·7	157	—	—	5·0	4·2	9·9
Carbuncles	30	—	—	1·3	0·9	10·7	3	—	—	—	0·4	0·1	11·3	33	—	—	1·1	1·0	10·8
Cellulitis	261	—	—	11·5	8·0	11·2	207	—	—	—	24·4	6·3	11·2	468	—	—	15·0	14·4	11·2
Lymphadenitis and lymph-angitis	54	—	—	2·4	3·1	21·1	33	—	—	—	3·9	1·6	18·2	87	—	—	2·8	4·8	20·0
Osteo-myelitis, periostitis, and osteitis	9	—	3	0·4	2·6	106·3	3	—	—	—	0·4	0·6	67·0	12	—	3	0·4	3·2	96·5
Pyæmia, septicæmia ..	1	—	—	0·0	0·0	6·0	4	2	—	—	0·5	0·2	19·2	5	2	—	0·2	0·2	16·6
Ulcer	5	—	—	0·2	0·3	22·8	11	—	1	—	1·3	1·2	39·1	16	—	—	0·5	1·5	34·0
Other diseases caused by infection	21	1	1	0·9	1·5	25·9	48	—	2	—	5·7	3·1	23·3	69	1	1	2·2	4·6	24·1
*TOTAL—DISEASES CAUSED BY INFECTION	4,590	5	35	202·4	176·8	14·1	2,921	12	52	4	344·7	127·2	15·9	7,511	17	39	241·1	304·0	14·8

* Analysed in further detail in table VII.

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TABLE XII.—NOSOLOGICAL TABLE FOR HOME, ABROAD, AND TOTAL FORCE, 1929.—*continued.*

Disease.	Home. Average strength, 22,685.						Abroad. Average strength, 8,474.							Total Force. Average strength, 31,159.					
	No. of cases.	No. of deaths.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages.		No. of cases.	No. of deaths.	No. invalided to United Kingdom.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages.		No. of cases.	No. of deaths.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages.	
					No. sick daily.	Duration of case.						No. sick daily.	Duration of case.					No. sick daily.	Duration of case.
						Days.							Days.						Days.
Contacts and carriers ..	83	—	1	3·7	3·7	16·3	6	—	—	—	0·7	0·3	19·8	89	—	1	2·9	4·0	16·5
Effects of parasites ..	20	—	—	0·9	2·0	37·3	23	—	1	—	2·7	1·2	18·8	43	—	—	1·4	3·2	27·4
Other diseases classified by systems. Diseases of nervous system and brain.																			
Neuritis	23	—	2	1·0	3·2	51·6	14	—	1	—	1·7	1·2	30·8	37	—	2	1·2	4·4	43·7
Nerve paralysis	7	—	1	0·3	1·0	52·0	2	—	—	—	0·2	0·3	54·0	9	—	1	0·3	1·3	52·4
Epilepsy (including observation cases)	9	—	4	0·4	0·5	20·6	3	—	—	—	0·4	0·3	33·3	12	—	4	0·4	0·8	23·8
Psychoneurosis	47	—	20	2·1	4·6	35·4	35	—	10	5	4·1	3·2	33·5	82	—	25	2·6	7·8	34·6
Mental diseases (including observation cases) ..	10	—	8	0·4	2·7	98·9	7	—	5	2	0·8	1·9	101·0	17	—	10	0·5	4·6	99·8
Other diseases of nervous system	47	—	12	2·1	3·4	26·5	26	—	1	1	3·1	1·1	14·8	73	—	13	2·3	4·5	22·3
TOTAL—DISEASES OF NERVOUS SYSTEM AND BRAIN	143	—	47	6·3	15·4	39·4	87	—	17	8	10·3	8·0	33·4	230	—	55	7·4	23·4	37·1

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Diseases of the Eye.																		
Infections	58	—	4	2·6	3·0	18·7	38	—	1	—	4·5	1·6	15·1	96	—	4	3·1	4·5	17·3
Other diseases of the eye	26	—	10	1·1	1·1	15·7	11	—	4	—	1·3	0·7	24·2	37	—	10	1·2	1·8	18·2
TOTAL—DISEASES OF THE EYE	84	—	14	3·7	4·1	17·8	49	—	5	—	5·8	2·3	17·1	133	—	14	4·3	6·4	17·5
Diseases of ear and nose.																			
Otitis media, acute ..	52	—	—	2·3	3·3	23·1	12	—	—	—	1·4	0·3	10·3	64	—	—	2·1	3·6	20·7
Otitis media, chronic ..	15	—	10	0·7	1·0	24·3	13	—	3	3	1·5	1·3	36·5	28	—	13	0·9	2·3	29·9
Other diseases of ear and nose	140	—	1	6·2	6·9	17·9	79	—	—	—	9·3	2·5	11·6	219	—	1	7·0	9·4	15·6
TOTAL—DISEASES OF EAR AND NOSE	207	—	11	9·1	11·1	19·6	104	—	3	3	12·3	4·1	14·5	311	—	14	10·0	15·3	17·9
Diseases of the circulatory system.																			
Endocarditis, acute ..	2	2	—	0·1	0·0	7·5	—	—	—	—	—	—	—	2	2	—	0·1	0·0	7·5
Valvular disease of the heart	28	1	23	1·2	6·2	80·7	2	—	1	1	0·2	0·3	54·0	30	1	24	1·0	6·5	78·9
Disease of myocardium ..	4	1	2	0·2	0·5	49·0	1	—	—	—	0·1	0·0	13·0	5	1	2	0·2	0·6	41·8
Disordered action of the heart	32	—	4	1·4	1·9	21·3	20	—	1	—	2·4	1·3	24·1	52	—	4	1·7	3·2	22·4
Varix	22	—	4	1·0	1·9	31·2	12	—	1	—	1·4	1·2	37·7	34	—	4	1·1	3·1	33·5
Other diseases of the circulatory system ..	21	1	5	0·9	2·9	49·5	12	—	1	—	1·4	0·8	25·1	33	1	5	1·1	3·7	40·6
TOTAL—DISEASES OF THE CIRCULATORY SYSTEM	109	5	38	4·8	13·4	44·8	47	—	4	1	5·5	3·7	28·9	156	5	39	5·0	17·1	40·0
Diseases of lymphatic system and ductless glands	12	—	8	0·5	2·9	88·5	1	—	1	—	0·1	0·3	113·0	13	—	8	0·4	3·2	90·4

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TABLE XII.—NOSOLOGICAL TABLE FOR HOME, ABROAD, AND TOTAL FORCE, 1929.—*continued.*

Disease.	Home. Average strength, 22,685.						Abroad. Average strength, 8,474.							Total Force. Average strength, 31,159.					
	No. of cases.	No. of deaths.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages.		No. of cases.	No. of deaths.	No. invalided to United Kingdom.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages.		No. of cases.	No. of deaths.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages.	
					No. sick daily.	Duration of case.						No. sick daily.	Duration of case.					No. sick daily.	Duration of case.
						Days.							Days.						Days.
Diseases of the Respiratory system. (*a*)																			
Bronchitis	91	—	2	4·0	5·6	22·4	43	—	2	—	5·1	2·3	19·7	134	—	2	4·3	7·9	21·6
Tracheitis	161	—	—	7·1	3·3	7·4	62	—	—	—	7·3	1·0	5·7	223	—	—	7·2	4·2	6·9
Asthma	10	—	2	0·4	0·4	13·2	4	—	1	—	0·5	0·4	36·5	14	—	2	0·5	0·8	19·9
Pleurisy	49	1	—	2·2	5·2	38·5	23	—	1	—	2·7	1·1	17·1	72	1	—	2·3	6·2	31·7
Other diseases of the respiratory system ..	15	—	5	0·7	2·3	55·2	6	—	3	—	0·7	1·3	80·0	21	—	5	0·7	3·6	62·3
TOTAL—DISEASES OF THE RESPIRATORY SYSTEM	326	1	9	14·4	16·6	18·6	138	—	7	—	16·3	6·1	16·1	464	1	9	14·9	22·7	17·9
Diseases of teeth and gums	57	—	—	2·5	1·6	10·0	22	—	3	—	2·6	1·1	17·6	79	—	—	2·5	2·6	12·1
Diseases of the Digestive System (excluding tonsillitis).																			
Hypertrophy of tonsils ..	202	—	—	8·9	7·8	14·2	17	—	—	—	2·0	1·2	26·2	219	—	—	7·0	9·1	15·1
Gastritis, acute	31	—	—	1·4	1·2	14·6	15	—	—	—	1·8	0·3	6·9	46	—	—	1·5	1·5	12·1
Gastritis, chronic ..	11	—	2	0·5	1·7	56·2	1	—	—	—	0·1	0·4	128·0	12	—	2	0·4	2·0	62·2

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Dyspepsia	71	—	—	3·1	2·3	11·9	31	—	—	—	3·7	1·1	12·6	102	—	—	3·3	3·4	12·1
Appendicitis	225	—	—	9·9	15·3	24·9	41	2	1	—	4·8	3·9	34·8	266	2	—	8·5	19·3	26·4
Hernia	50	—	—	2·2	4·8	35·1	16	—	1	—	1·9	1·5	35·1	66	—	—	2·1	6·3	35·1
Constipation	93	—	—	4·1	2·1	8·1	57	—	—	—	6·7	1·0	6·6	150	—	—	4·8	3·1	7·5
Colic	30	—	—	1·3	0·6	6·9	7	—	—	—	0·8	0·2	9·0	37	—	—	1·2	0·8	7·3
Hæmorrhoids	59	—	—	2·6	3·3	20·7	43	—	—	—	5·1	1·6	13·2	102	—	—	3·3	4·9	17·5
Jaundice	16	—	—	0·7	1·1	24·4	57	—	1	—	6·7	2·9	18·4	73	—	—	2·3	3·9	19·7
Other diseases of the digestive system	132	2	4	5·8	12·0	33·3	52	—	4	—	6·1	3·7	25·8	184	2	4	5·9	15·7	31·1
TOTAL—DISEASES OF THE DIGESTIVE SYSTEM ..	920	2	6	40·6	52·3	20·7	337	2	7	—	39·8	17·7	19·2	1,257	4	6	40·3	70·0	20·3
Diseases due to disorders of nutrition or metabolism	10	—	1	0·4	0·6	20·6	—	—	—	—	—	—	—	10	—	1	0·3	0·6	21·4
Diseases of the Generative System.																			
Phimosis	30	—	—	1·3	1·5	18·6	20	—	—	—	2·4	1·0	17·8	50	—	—	1·6	2·5	18·3
Balanitis	15	—	—	0·7	0·3	7·1	5	—	—	—	0·6	0·2	13·4	20	—	—	0·6	0·5	8·6
Urethritis	52	—	—	2·3	5·0	35·4	41	—	—	—	4·8	3·2	28·4	93	—	—	3·0	8·2	32·3
Varicocele	19	—	—	0·8	1·5	28·9	13	—	—	—	1·5	0·9	24·8	32	—	—	1·0	2·4	27·3
Hydrocele	4	—	—	0·2	0·2	15·5	2	—	—	—	0·2	0·1	21·0	6	—	—	0·2	0·3	17·3
Epididymitis	7	—	1	0·3	0·6	30·0	3	—	—	—	0·4	0·3	32·0	10	—	1	0·3	0·8	30·6
Other diseases of the generative system	37	—	—	1·6	2·2	22·1	32	—	—	—	3·8	1·7	19·1	69	—	—	2·2	3·9	20·7
TOTAL—DISEASES OF THE GENERATIVE SYSTEM	164	—	1	7·2	11·4	25·3	116	—	—	—	13·7	7·3	22·9	280	—	1	9·0	18·6	24·3

(*a*) Excluding pneumonia and tuberculosis, for which *see* p. 24.

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TABLE XII.—NOSOLOGICAL TABLE FOR HOME, ABROAD, AND TOTAL FORCE, 1929.—*continued.*

Disease.	Home. Average strength, 22,685.						Abroad. Average strength, 8,474.							Total Force. Average strength, 31,159.					
	No. of cases.	No. of deaths.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages.		No. of cases.	No. of deaths.	No. invalided to United Kingdom.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages.		No. of cases.	No. of deaths.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages.	
					No. sick daily.	Duration of case.						No. sick daily.	Duration of case.					No. sick daily.	Duration of case.
						Days.							Days.						Days.
Diseases of Organs of Locomotion.																			
Diseases of the bone ..	14	—	4	0·6	2·9	75·6	2	—	1	—	0·2	0·3	55·5	16	—	4	0·5	3·2	73·1
Diseases of the joints ..	93	—	7	4·1	9·5	37·4	47	—	11	3	5·5	5·7	44·5	140	—	10	4·5	15·3	39·8
Myalgia and lumbago ..	103	—	—	4·5	3·7	13·0	33	—	—	—	3·9	0·7	8·2	136	—	—	4·4	4·4	11·9
Diseases of muscles, tendons and bursæ ..	32	—	2	1·4	2·8	31·7	20	—	—	—	2·4	0·7	12·4	52	—	2	1·7	3·5	24·3
Deformities of limbs ..	29	—	8	1·3	2·7	34·5	9	—	1	—	1·1	1·3	52·9	38	—	8	1·2	4·0	38·9
TOTAL—DISEASES OF ORGANS OF LOCOMOTION	271	—	21	11·9	21·6	29·1	111	—	13	3	13·1	8·8	28·8	382	—	24	12·3	30·4	29·0
Diseases of Areolar Tissue or Skin.																			
Impetigo	174	—	—	7·7	8·1	17·0	57	—	—	—	6·7	2·3	14·7	231	—	—	7·4	10·4	16·5
Scabies	47	—	—	2·1	1·2	9·7	9	—	—	—	1·1	0·3	11·9	56	—	—	1·8	1·5	10·0
Dermatitis	31	—	—	1·4	1·8	21·6	23	—	2	—	2·7	2·2	34·9	54	—	—	1·7	4·0	27·3
Urticaria	26	—	—	1·1	0·6	8·3	10	—	1	—	1·2	0·3	12·4	36	—	—	1·2	0·9	9·5
Eczema	20	—	—	0·9	1·7	31·2	15	—	—	—	1·8	0·8	20·0	35	—	—	1·1	2·5	26·4
Herpes	32	—	—	1·4	1·0	10·9	7	—	—	—	0·8	0·2	12·4	39	—	—	1·3	1·2	11·2
Psoriasis	6	—	1	0·3	1·0	60·2	2	—	—	—	0·2	0·3	52·5	8	—	1	0·3	1·3	58·2
Tinea cruris	39	—	—	1·7	1·5	13·8	11	—	—	—	1·3	0·2	6·8	50	—	—	1·6	1·7	12·3

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Ingrowing toe-nail ..	27	—	—	1·2	1·1	14·9	25	—	—	—	3·0	1·1	16·5	52	—	—	1·7	2·2	15·7
Other diseases of the skin	78	—	1	3·4	5·1	23·9	43	1	3	1	5·1	3·3	27·7	121	1	2	3·9	8·4	25·2
TOTAL—DISEASES OF AREOLAR TISSUE OR SKIN.	480	—	2	21·2	23·1	17·6	202	1	6	1	23·8	11·1	20·0	682	1	3	21·9	34·2	18·3
Diseases of Urinary Organs.																			
Nephritis	10	1	4	0·4	2·1	76·2	1	—	—	—	0·1	0·0	10·0	11	1	4	0·4	2·1	70·2
Pyelitis	4	—	—	0·2	0·4	34·2	2	—	1	—	0·2	0·2	41·0	6	—	—	0·2	0·6	36·5
Cystitis	4	—	—	0·2	0·3	27·2	9	—	—	—	1·1	0·6	23·3	13	—	—	0·4	0·9	24·5
Incontinence of urine ..	1	—	—	0·0	0·0	16·0	1	—	—	—	0·1	0·0	5·0	2	—	—	0·1	0·1	10·5
Albuminuria	3	—	—	0·1	0·3	33·3	6	—	—	—	0·7	0·1	5·3	9	—	—	0·3	0·4	14·7
Other diseases of urinary organs	36	1	2	1·6	2·8	28·6	22	—	8	—	2·6	4·1	67·6	58	1	2	1·9	6·9	43·4
TOTAL—DISEASES OF URINARY ORGANS ..	58	2	6	2·6	5·9	37·1	41	—	9	—	4·8	5·0	44·5	99	2	6	3·2	10·9	40·2
Tumours and Cysts.																			
Tumours, non-malignant	13	1	1	0·6	1·0	26·8	9	—	—	1	1·1	1·0	39·8	22	1	2	0·7	1·9	32·1
Tumours, malignant ..	—	—	1	—	0·5	—	3	—	3	1	0·4	0·8	103·0	3	—	2	0·1	1·3	162·3
Cysts	22	—	—	1·0	0·8	13·2	7	—	—	—	0·8	0·4	18·3	29	—	—	0·9	1·1	14·4
TOTAL—TUMOURS AND CYSTS	35	1	2	1·5	2·2	23·3	19	—	3	2	2·2	2·2	41·8	54	1	4	1·7	4·4	29·8
Poisons.	15	—	—	0·7	0·7	17·3	41	2	—	—	4·8	1·5	13·2	56	2	—	1·8	2·2	14·3
No appreciable disease ..	35	—	—	1·5	1·0	10·6	20	—	—	—	2·4	0·8	14·4	55	—	—	1·8	1·8	12·0
Debility	20	—	—	0·9	0·7	13·4	12	—	4	—	1·4	0·7	21·7	32	—	—	1·0	1·4	16·5
*TOTAL—ALL DISEASES	7,639	16	202	336·8	367·2	17·5	4,297	17	135	22	507·1	209·3	17·8	11,936	33	224	383·1	576·5	17·6

* Analysed in further detail in table VII.

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TABLE XII.—NOSOLOGICAL TABLE FOR HOME, ABROAD, AND TOTAL FORCE, 1929.—*continued.*

Disease.	Home. Average strength, 22,685.						Abroad. Average strength, 8,474.							Total Force. Average strength, 31,159.					
	No. of cases.	No. of deaths.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages.		No. of cases.	No. of deaths.	No. invalided to United Kingdom.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages.		No. of cases.	No. of deaths.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages.	
					No. sick daily.	Duration of case.						No. sick daily.	Duration of case.					No. sick daily.	Duration of case.
						Days.							Days.						Days.
General Injuries.																			
Burns and scalds ..	7	2	1	0·3	1·1	57·7	4	2	—	—	0·5	1·0	95·2	11	4	1	0·4	2·2	71·4
Heatstroke, sunstroke, and heat exhaustion ..	2	—	—	0·1	0·1	15·0	6	—	—	—	0·7	0·2	9·2	8	—	—	0·3	0·2	10·6
Suffocation and strangulation	1	1	—	0·0	—	—	1	—	—	—	0·1	0·0	4·0	2	1	—	0·1	0·0	2·0
Drowning	5	4	—	0·2	0·0	3·4	4	4	—	—	0·5	—	—	9	8	—	0·3	0·0	1·9
Minor injuries	84	—	—	3·7	2·2	9·7	25	—	—	—	3·0	0·7	9·8	109	—	—	3·5	2·9	9·7
Multiple fractures ..	88	27	3	3·9	12·4	51·6	20	7	4	1	2·4	3·3	61·1	108	34	4	3·5	15·8	53·4
Multiple wounds	1	—	—	0·0	0·0	14·0	—	—	—	—	—	—	—	1	—	—	0·0	0·0	14·0
Other injuries	10	—	—	0·4	0·3	10·0	8	—	1	—	0·9	0·2	10·0	18	—	—	0·6	0·5	10·0
*TOTAL—GENERAL INJURIES	198	34	4	8·7	16·2	29·9	68	13	5	1	8·0	5·4	29·2	266	47	5	8·5	21·7	29·7
Local Injuries.																			
(i) Head and Neck:																			
Contusions and wounds ..	101	1	—	4·5	3·0	11·0	38	—	1	—	4·5	1·2	11·5	139	1	—	4·5	4·2	11·1
Gunshot wounds	—	—	—	—	—	—	1	1	—	—	0·1	—	—	1	1	—	0·0	—	—
Burns and scalds ..	3	—	1	0·1	0·7	82·6	1	—	—	—	0·1	0·0	17·0	4	—	1	0·1	0·7	66·2
Fracture of skull ..	34	17	2	1·5	2·2	23·9	8	3	1	—	0·9	0·6	27·9	42	20	2	1·3	2·8	24·6
Concussion of brain ..	88	1	3	3·9	4·8	19·8	8	—	1	—	0·9	0·6	26·6	96	1	3	3·1	5·4	20·4
Other fractures	24	—	—	1·1	1·1	16·6	8	—	—	—	0·9	0·7	34·1	32	—	—	1·0	1·8	21·0
Other injuries	18	—	—	0·8	0·4	8·6	13	—	—	—	1·5	0·4	12·5	31	—	—	1·0	0·9	10·2
TOTAL—HEAD AND NECK	268	19	6	11·8	12·2	16·7	77	4	3	—	9·1	3·6	17·2	345	23	6	11·1	15·9	16·8

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(ii) Trunk:																			
Contusions and wounds..	47	—	—	2·1	1·5	11·7	19	—	—	—	2·2	0·7	13·7	66	—	—	2·1	2·2	12·3
Gunshot wounds.. ..	2	1	—	0·1	0·0	6·5	—	—	—	—	—	—	—	2	1	—	0·1	0·0	6·5
Fractures	10	—	—	0·4	1·3	46·5	4	—	—	—	0·5	0·2	14·0	14	—	—	0·5	1·4	37·2
Other injuries	20	—	—	0·9	1·1	20·2	4	—	—	—	0·5	0·1	7·8	24	—	—	0·8	1·2	18·1
TOTAL—TRUNK	79	1	—	3·5	3·9	18·1	27	—	—	—	3·2	1·0	12·9	106	1	—	3·4	4·9	16·8
(iii) Upper extremity:																			
Contusions and wounds..	88	—	—	3·9	3·4	14·3	39	—	1	—	4·6	1·8	16·6	127	—	—	4·1	5·2	15·0
Gunshot wounds.. ..	1	—	—	0·0	0·1	23·0	1	—	—	—	0·1	0·0	17·0	2	—	—	0·1	0·1	20·0
Burns and scalds ..	9	—	—	0·4	0·7	26·6	9	—	—	—	1·1	0·3	11·2	18	—	—	0·6	0·9	18·9
Fractures..	128	—	1	5·6	12·6	36·0	57	1	2	1	6·7	4·5	28·8	185	1	2	5·9	17·1	33·8
Dislocations	19	—	—	0·8	1·3	25·2	11	—	—	—	1·3	0·6	21·3	30	—	—	1·0	2·0	23·7
Sprains	21	—	—	0·9	0·6	10·4	20	—	—	—	2·4	0·4	7·8	41	—	—	1·3	1·0	9·1
Other injuries	14	—	—	0·6	0·6	14·4	3	—	—	—	0·4	0·1	9·3	17	—	—	0·5	0·6	13·5
TOTAL—UPPER EXTREMITY	280	—	1	12·3	19·2	25·1	140	1	3	1	16·5	7·7	20·2	420	1	2	13·5	27·0	23·4
(iv) Total—Hand and Wrist	117	—	—	5·2	6·2	19·3	60	—	1	—	7·1	2·9	17·5	177	—	—	5·7	9·1	18·7
(v) Total—Rest of limb	163	—	1	7·2	13·1	29·3	80	1	2	1	9·4	4·9	22·2	243	1	2	7·8	17·9	26·9
(vi) Lower extremity:																			
Contusions and wounds..	210	—	—	9·3	8·1	14·1	94	—	—	—	11·1	3·1	11·9	304	—	—	9·8	11·2	13·4
Gunshot wounds.. ..	—	—	—	—	—	—	2	—	—	—	0·2	0·2	40·0	2	—	—	0·1	0·2	40·0
Burns and scalds ..	17	—	—	0·7	1·4	30·8	8	—	—	—	0·9	0·9	41·6	25	—	—	0·8	2·3	34·3
Fractures..	99	—	1	4·4	22·0	81·1	28	—	5	—	3·3	5·4	70·8	127	—	1	4·1	27·4	78·8
Dislocations	2	—	—	0·1	0·1	25·5	1	—	—	—	0·1	0·0	9·0	3	—	—	0·1	0·2	20·0
Sprains	268	—	—	11·8	9·4	12·8	125	—	—	—	14·8	3·8	11·2	393	—	—	12·6	13·3	12·3
Other injuries	232	—	—	10·2	9·4	14·8	164	—	5	—	19·4	7·2	16·0	396	—	—	12·7	16·5	15·2
TOTAL—LOWER EXTREMITY	828	—	1	36·5	50·5	22·2	422	—	10	—	49·8	20·7	17·9	1,250	—	1	40·1	71·1	20·8

* Analysed in further detail in table VII.

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TABLE XII.—NOSOLOGICAL TABLE FOR HOME, ABROAD, AND TOTAL FORCE, 1929.—*continued.*

Disease.	Home. Average strength, 22,685.						Abroad. Average strength, 8,474.							Total Force. Average strength, 31,159.					
	No. of cases.	No. of deaths.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages. No. sick daily.	Averages. Duration of case.	No. of cases.	No. of deaths.	No. invalided to United Kingdom.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages. No. sick daily.	Averages. Duration of case.	No. of cases.	No. of deaths.	No. finally invalided.	Incidence of cases per 1,000 of strength.	Averages. No. sick daily.	Averages. Duration of case.
						Days.							Days.						Days.
(vii) TOTAL—FOOT AND ANKLE	352	—	—	15·5	13·7	14·2	186	—	—	—	21·9	5·3	10·5	538	—	—	17·3	19·0	12·9
(viii) TOTAL—KNEE ..	253	—	—	11·2	11·4	16·4	152	—	5	—	17·9	7·7	18·4	405	—	—	13·0	19·0	17·1
(ix) TOTAL—REST OF LIMB..	223	—	1	9·8	25·4	41·6	84	—	5	—	9·9	7·6	33·2	307	—	1	9·9	33·1	39·3
*TOTAL—ALL LOCAL INJURIES	1,455	20	8	64·1	85·9	21·5	666	5	16	1	78·6	33·0	18·1	2,121	25	9	68·1	118·9	20·5
*TOTAL—ALL INJURIES ..	1,653	54	12	72·9	102·1	22·5	734	18	21	2	86·6	38·4	19·1	2,387	72	14	76·6	140·5	21·5
*TOTAL—ALL DISEASES ..	7,639	16	202	336·8	367·2	17·5	4,297	17	135	22	507·1	209·3	17·8	11,936	33	224	383·1	576·5	17·6
*TOTAL—ALL DISABILITIES	9,292	70	214	409·7	469·3	18·4	5,031	35	156	24	593·7	247·7	18·0	14,323	105	238	459·7	717·0	18·3

* Analysed in further detail in table VII.

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CHAPTER II.—THE HEALTH OF THE ROYAL AIR FORCE AT HOME DURING 1929.

General.

36. Excluding the Fleet Air Arm, the total number of cases of sickness at home during 1929, including cases of less than 48 hours duration, was 13,962—an incidence per 1,000 of 626·1 compared with averages of 634·6 and 857·5 for the two earlier periods 1925–28 and 1921–24 respectively. Taking the admissions to hospital only, the total number of cases was 9,181, representing an incidence of 411·7 compared with average figures of 364·1 and 378·6 for the two previous periods. This rise in incidence is to be found in an increase in the incidence figures for diseases caused by infection, and in particular those of influenza, the rate of which increased from 13·1 per 1,000 in 1928 to 57·4 in 1929, and of tonsillitis which showed an increase in incidence from 26·6 in 1928 to 42·0 in the year under review. The number of sick daily, including 48-hour cases is the same as in 1928 while, taking into account admissions to hospital only (*i.e.*, cases of over 48 hours duration), the figure for 1929 is slightly less than that for 1928, but both figures are above the corresponding figures for the two previous periods. The death-rate is lower than in 1928 and than the previous two averages, but the invaliding rate has risen to 9·6 compared with 7·1 in 1928 and averages over the two earlier periods of 8·4 and 13·6 respectively.

37. Those diseases which are shown by table XII, page 24, to have been responsible for most of the medical non-effectiveness during 1929 are analysed by age groups in table XIII, page 38, and by stations in table XIV, page 39. The incidence of injury and the incidence of all diseases are included in each table to complete the analysis of total sickness, and in table XIV those stations have been selected which maintained an average strength of 500 or over during the year.

38. In the age group table the more prominent features are the steady progressive decrease in the incidence of upper air passage infections with the increase in age, the high influenzal rate among officers and cadets, and the decreasing liability to sickness (all disabilities) in succeeding age groups. Disease incidence, as in previous years, is highest in the earlier groups up to nineteen years of age, and that of injury in the next groups 20–23 years. Infections of the upper air passages and digestive troubles continue to pick out the youngest age group, i.e., under eighteen years.

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39. In comparing the sickness at the larger stations, Grantham has been added to the stations included in the table for 1928, and cannot, therefore, enter into the comparison. Flower Down, which was third in 1928, shows the highest total disability incidence for 1929, and the increased incidence from 449·6 to 700·5 per 1,000 is mainly due to increases in the incidences of influenza and upper air passage infections. Halton, which had the highest sickness incidence in 1928, shows a reduction from 492·4 per 1,000 to 459·4 and takes fourth place. Gosport, which showed the lowest total disability rate in 1928, is in 1929 the lowest rate but two out of a total of fourteen stations, the lowest being Eastchurch, which was the lowest but one in 1928. Cranwell, which occupied third place in 1928, is placed second in 1929.

40. Chart 1, facing page 39, shows graphically the monthly incidence of sickness at home during 1929 with comparative curves of the two earlier periods. The influenzal peaks are noticeable, as also is the earlier and more pronounced drop in the summer months. In general, the fall in the curve during the summer months is largely due to the influence of leave, and an additional factor in 1929 was the effect of unusually good climatic conditions.

Notes on Diseases.

41. *Influenza.*—The incidence rose from 13·1 in 1928 to 57·4 in 1929, but the number of sick daily increased less, from 8·4 to 30·6, owing to a reduction in the average duration of each case of practically two days.

42. *Infections of the upper air passages.*—The incidence of these diseases increased to 82·6 in 1929 from 69·4 in 1928, and the chief factor in this increase was tonsillitis—42·0 per 1,000, compared with 26·6 per 1,000 in 1928.

43. *Acute rheumatism.*—In 1929 there were 73 cases of acute rheumatism compared with eighty in 1928, and of these totals 46 and 34 respectively occurred among aircraft apprentices (*i.e.*, airmen under 18 years of age) at Halton. Of the 34 cases in 1928, three developed definite lesions of the heart, while a further twelve were reported as having given evidence of defective action of the heart during the attack. In 1929, five of the 46 cases developed cardiac lesions, while in an additional five there were signs of cardiac involvement, and three of the 46 had had a previous attack of acute rheumatism in 1928.

44. *Diseases of the heart.*—Sixty-six cases of diseases of the heart were recorded of which 32 were considered to be " disordered action," 28 were valvular diseases and six were diseases of the myo-and endocardium. The corresponding figures in 1928 were 65, 51, five and nine, and the incidence of diseases of the heart remained the same in both years—2·9 per 1,000.

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45. *Otitis media.*—Fifty-two cases, or an incidence of 2·3 per 1,000, of acute otitis media were reported in 1929 compared with 28 cases, or an incidence of 1·2, in 1928. The incidence of chronic otitis media remained practically the same in both years.

46. *Tonsils.*—The increase in cases of acute tonsillitis, 953 (42·0 per 1,000) in 1929 compared with 595 (26·6 per 1,000) in 1928, has been referred to previously, but a further note is to be made of an equally marked rise in the incidence of hypertrophy of the tonsils. In 1928 the number of cases was 121, representing an incidence of 5·4 per 1,000, while in 1929 the number and rate had increased to 202 and 8·9 per 1,000.

47. *Venereal disease.*—The incidence of venereal disease and the number of sick daily from this cause have been further reduced to 11·0 and 1·7 per 1,000 from 13·5 and 2·0 respectively in 1928.

48. *Diseases of the skin.*—The incidences of impetigo and scabies, the two most frequent skin lesions, have decreased from 10·5 and 2·4 per 1,000 in 1928 to 7·7 and 2·1 respectively in 1929 while that of tinea cruris, which in 1925 was as high as 5·0 per 1,000 and 2·5 per 1,000 in 1928, has been reduced to 1·7 per 1,000 in 1929.

49. *Injury.*—The incidence of all injuries at home was 72·9 per 1,000 in 1929, compared with 72·4 in 1928, and an average of 70·0 over the last five-year period.

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TABLE XIII.—INCIDENCE OF CERTAIN DISEASES AT HOME ANALYSED BY AGE GROUPS.

Age last birthday.	Average strength.	Case incidence per 1,000 of strength.								
		Influenza.	Upper air passage infections.	Venereal diseases.	Respiratory diseases.	Digestive diseases.	All other diseases.	All diseases.	All injuries.	All disabilities.
Airmen—										
Under 18 ..	1,927	36·8	178·5	0·5	10·4	54·5	271·9	552·6	48·3	600·9
18 and 19 ..	3,265	54·2	109·9	3·1	15·9	38·0	137·2	358·3	83·3	441·6
20 and 21 ..	3,339	50·6	91·0	10·5	13·8	35·9	129·1	330·9	90·4	421·3
22 and 23 ..	2,389	56·5	87·9	20·1	10·9	38·1	135·6	349·1	91·3	440·4
24 and 25 ..	2,242	54·0	74·9	24·1	9·4	41·0	107·5	310·9	78·0	388·9
26 and 27 ..	2,271	64·3	58·6	15·4	15·0	36·1	112·7	302·1	61·2	363·3
28 and 29 ..	1,804	53·2	57·6	17·7	14·4	38·3	116·5	297·7	62·1	359·8
30 to 34 ..	1,779	51·7	30·9	10·1	16·9	39·3	83·8	232·7	38·8	271·5
35 to 39 ..	756	38·3	45·0	7·9	21·2	21·2	88·6	222·2	43·7	265·9
40 and over ..	454	52·9	28·6	—	19·8	33·0	110·2	244·5	26·4	270·9
Total, airmen ..	20,226	52·4	85·2	11·8	13·9	38·8	133·5	335·6	70·4	406·0
Officers and cadets ..	2,459	98·4	61·0	4·5	18·7	55·3	109·0	346·9	92·7	439·6
Total at home..	22,685	57·4	82·6	11·0	14·4	40·6	130·8	336·8	72·9	409·7

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Chart I. Sickness at Home, 1929.

Monthly Case Incidence per 1,000 of Strength.

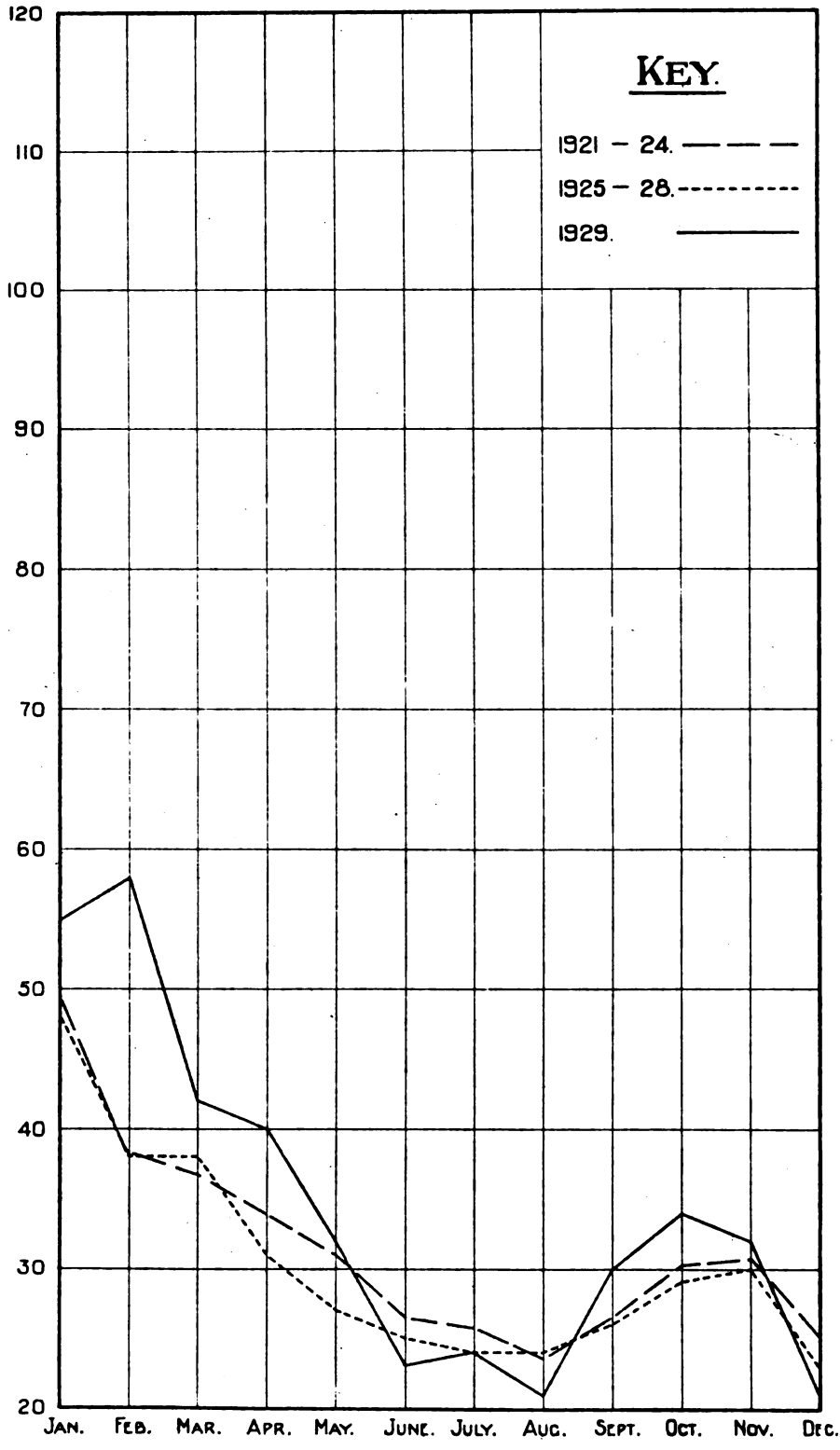

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TABLE XIV.—SICKNESS AT PRINCIPAL STATIONS AT HOME.

Station.	Average strength.	Case incidence per 1,000 of strength.								
		Influenza.	Upper air passage infections.	Venereal diseases.	Respiratory diseases.	Digestive diseases.	All other diseases.	All diseases.	All injuries.	All disabilities.
Andover ..	482	35·3	72·6	6·2	4·1	27·0	60·2	205·4	37·3	242·7
Calshot	558	30·5	87·8	9·0	12·5	21·5	89·6	250·9	102·1	353·0
Cranwell ..	1,072	44·8	84·9	14·9	13·1	48·5	164·2	370·4	123·1	493·5
Digby	531	28·2	71·6	13·2	20·7	41·4	82·9	258·0	82·9	340·9
Eastchurch ..	588	18·7	62·9	8·5	3·4	18·7	57·8	170·0	59·6	229·6
Flower Down ..	591	44·0	351·9	6·8	22·0	37·2	192·9	654·8	45·7	700·5
Gosport ..	489	98·2	32·7	8·2	8·2	18·4	79·7	245·4	49·1	294·5
Grantham ..	534	58·0	86·1	28·1	7·5	56·2	112·4	348·3	103·0	451·3
Halton	3,581	15·9	110·6	3·1	15·1	58·1	206·1	408·9	50·5	459·4
Henlow	1,533	103·1	76·3	13·7	21·5	35·9	105·7	356·2	67·2	423·4
Manston ..	975	19·5	100·5	12·3	41·0	44·1	195·9	413·3	93·3	506·6
Netheravon ..	579	84·6	53·5	3·5	20·7	27·6	112·3	302·2	120·9	423·1
Sealand ..	524	40·1	51·5	13·4	9·5	30·5	108·8	253·8	95·4	349·2
Uxbridge ..	1,731	87·2	57·8	2·9	9·2	42·8	143·3	343·2	45·6	388·8
All other stations	8,917	71·1	65·6	14·9	12·2	37·8	107·8	309·4	77·0	386·4
Total ..	22,685	57·4	82·6	11·0	14·4	40·6	130·8	336·8	72·9	409·7

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CHAPTER III.—THE HEALTH OF THE ROYAL AIR FORCE ABROAD DURING 1929.

General.

50. Excluding the Fleet Air Arm, the total number of cases of sickness abroad during 1929 was 8,375, or an incidence of 1042·6 per 1,000, compared with 1161·8 per 1,000 in 1928 and 1347·5 in 1927. Excluding cases of less than 48 hours duration, the number of cases of sickness was 4,852, representing an incidence of 604·0 per 1,000, compared with 640·0 in 1928. Both including and excluding 48-hour cases the incidence of sickness during 1929 was well below the respective averages of the two preceding periods.

51. The average number of days sickness per head of the force serving abroad and the number of sick daily, both including and excluding cases of less than 48 hours duration, were lower in 1929 than in 1928, and were well below the previous averages, but the average duration per case was higher than in former years.

52. The death-rate fell in 1929 to 4·1 per 1,000 from 6·0 in 1928 and averages of 6·7 and 7·3 in the two previous periods, while the rate of invaliding to the United Kingdom, although a little higher in 1929 than in 1928, was still well below the two averages of 22·1 and 22·4 for the periods 1925–28 and 1921–24 respectively.

53. As in table XIII for the force at home, certain diseases which were the chief causes of non-effectiveness in 1929 are analysed by age groups for the force abroad in table XV, page 44, and the two tables are comparable except for dysentery, malaria, sandfly fever and the total disease and disability rates; these total rates are, of course, influenced by the three diseases referred to, which are peculiar to the force abroad. Upper air passage infections, as at home, affect the youngest age group chiefly, and thereafter show a progressive decrease through the higher age groups, while venereal disease shows highest against the middle groups.

54. Table XVI, page 45, analyses all diseases and in particular dysentery, malaria and sandfly fever at the larger stations abroad, showing the actual number of cases of each, the percentage of the total attributable to each and the incidence per 1,000. In 1928 these three diseases accounted for 43·7 per cent. of all diseases at Karachi, 18·7 per cent. at Hinaidi, and 25·4 at Abu Sueir; in 1929, the corresponding figures were 23·6, 17·6 and 20·2—a reduction at each station and most marked at Karachi, where the

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main factor was the reduction in incidence of malaria, 73·7 per 1,000 in 1929 compared with 191·5 in 1928. At all the stations analysed, the percentage part played by these three diseases in medical non-effectiveness fell during 1929, except at Malta, where the percentage rose from 15·2 in 1928 to 18·3 in 1929. The combined incidence of dysentery, malaria and sandfly fever was reduced at all stations and most markedly at Karachi and Malta.

55. Table XVII, page 46, analyses the number of cases of dysentery, malaria and sandfly fever by the station abroad where they occurred, and sub-divides the first two diseases to show the number of primary cases in each. Throughout the force abroad there were sixty cases of primary dysentery and five recurrences, compared with 65 primary and six recurrences in 1928. The respective numbers of primary bacillary and protozoal infections in the Mediterranean Littoral, India and Iraq in 1929 were 6:4, 15:2, 7:20, compared with 14:2, 19:2, and 10:6 in 1928. There were 410 cases of primary malaria in 1929 and 219 recurrences, compared with 177 primary and 344 recurrences in 1928. All commands showed an increase in the incidence of primary malaria in 1929 and in particular India and Iraq. The decreased proportion of recurrent cases in India and the Mediterranean Littoral may be attributed, as was suggested in the last report of this series, to the normal movement of airmen from Iraq to these two commands : a high incidence of malaria in Iraq in 1927 produced a high recurrent to primary ratio in India and the Mediterranean Littoral in 1928, while the marked fall in incidence of primary malaria in Iraq during 1928 has brought about a reduced recurrent to primary ratio in both these commands in 1929.

56. A further analysis of dysentery, malaria and sandfly fever is made in table XVIII, page 47, to show the monthly incidence by commands and, in addition, to compare the incidence of primary cases by commands during 1929 with the average incidences during the two earlier periods. In the monthly incidence there is little, if any, variation on the whole from the picture presented by the corresponding tables in earlier reports.

57. The incidence of dysentery shows a satisfactory decrease in all commands ; primary malaria a decrease during the last five years in Iraq and the Mediterranean Littoral and a very steady figure in India throughout ; sandfly fever a slight decrease compared with the earlier period in the Mediterranean Littoral, an increase over the same period in India, and a very marked progressive reduction in Iraq, where in earlier years it was one of the main factors in medical non-effectiveness.

58. Chart II, facing page 47, shows the monthly incidence of sickness abroad during 1929 compared with the two previous periods.

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Notes on Diseases.

59. *Enteric group.*—Forty-eight cases, the same number as in 1928, were reported during 1929 and are classified as follows :—

(i) *Typhoid fever.*—Sixteen cases (28 in 1928) were notified—eight in India, five in Iraq, two in Aden and one in the Middle East. In thirteen of these cases B. typhosus was isolated, and the remaining three gave positive results to the agglutination test. There were three deaths, two invalids to the United Kingdom and three cases remaining in hospital at the end of the year. In the cases of death, the durations of the cases were fourteen, eighteen, and twenty-two days, an average of eighteen days, while in the ten cases discharged to duty during the year the average duration was sixty days.

(ii) *Paratyphoid A.*—Five cases (one in 1928) in which B. paratyphosus A. was isolated were reported, four from India and one from Iraq. All the cases recovered, and one only was invalided to the United Kingdom : the average duration per case was 75 days, exclusive of convalescence.

(iii) *Paratyphoid B.*—Ten cases were notified (nine in 1928), five in Iraq, two in the Middle East, and one each in Aden and at home ; a further case was reported in an officer invalided to the United Kingdom from India suffering from heterophoria, who developed enteric in the Indian Ocean and on arrival in the United Kingdom was admitted to hospital where B. paratyphosus B. was isolated. In the case which occurred in the United Kingdom the individual had served in Iraq, where he gave a history of clinical dysentery in 1924 ; for the four years prior to his attack of paratyphoid B. he had served the whole time at Uxbridge. In five cases B. paratyphosus B. was isolated, and in the remaining five the diagnosis was based on the agglutination test. All the cases recovered, and six were invalided to the United Kingdom. The average duration per case, exclusive of periods of convalescence, was 61 days.

(iv) *Clinical enteric.*—Seventeen cases coming under this heading, *i.e.*, clinically one of the enteric fevers but unconfirmed bacteriologically (ten in 1928) were reported during 1929, eight in India, five in Iraq, three in the Middle East and one at Aden. One case (India) died, four were invalided to the United Kingdom from Iraq, six were still in hospital at the end of the year, and the remainder returned to duty in their respective commands. Excluding convalescence, the average duration per case was 52 days.

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60. *Enteritis and gastro-enteritis.*—357 cases were notified from abroad during 1929—an incidence of 42·1 per 1,000, compared with 384, or an incidence of 47·3 per 1,000 in 1928. There were no deaths and no invalidings to the United Kingdom for this cause.

61. *Influenza.*—The incidence of this disease abroad was further reduced in 1929 to 7·8 per 1,000 from 14·3 in 1928 and 22·1 in 1927.

62. *Infections of the upper air passages.*—The incidence of this group of diseases was reduced by two cases per 1,000 compared with 1928, and the incidence abroad was lower than that at home, whereas in 1928 it was higher, and in 1926 and 1927 it was approximately the same.

63. *Psychoneurosis.*—Ten cases were invalided from abroad to the United Kingdom during 1929, compared with seventeen in 1928 and thirty in 1927.

64. *Heatstroke and heat exhaustion.*—Six cases occurred abroad during 1929, compared with 27 in 1928 and nine in 1927. There were no deaths from this cause and no invalidings to the United Kingdom.

65. *Otitis media.*—The incidence of acute and chronic cases was exactly the same in 1929 as in 1928—1·4 and 1·5 per 1,000 respectively. In 1928 there were five invalidings to the United Kingdom for chronic otitis media and two final invalids, while in 1929 the corresponding figures were three and three.

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TABLE XV.—INCIDENCE OF CERTAIN DISEASES ABROAD, ANALYSED BY AGE GROUPS.

Age last birthday.	Average strength.	Case incidence per 1,000 of strength.										
		Dysentery.	Malaria.	Sandfly fever.	Upper air passage infections.	Venereal diseases.	Respiratory diseases.	Digestive diseases.	All other diseases.	All diseases.	All injuries.	Total disabilities.
Airmen—												
18 and 19	90	*	*	*	*	*	*	*	*	*	*	*
20 and 21	1,002	11·0	40·9	69·9	123·8	15·0	15·0	33·9	240·5	549·9	96·8	646·7
22 and 23	2,134	5·6	87·2	55·3	77·8	28·1	13·6	33·7	234·8	536·1	86·2	622·3
24 and 25	1,590	2·5	94·3	50·3	71·1	34·0	16·4	37·1	189·9	495·6	93·1	588·7
26 and 27	884	9·0	81·4	53·2	80·3	29·4	21·5	32·8	212·7	520·4	88·2	608·6
28 and 29	639	7·8	65·7	36·0	76·7	39·1	14·1	43·8	184·7	467·9	90·8	558·7
30 to 34	725	9·7	66·2	27·6	55·2	27·6	15·2	52·4	194·4	448·3	69·0	517·3
35 to 39	311	6·4	64·3	41·8	54·7	16·1	32·2	48·2	183·3	447·0	28·9	475·9
40 and over	149	6·7	53·7	26·8	40·3	6·7	20·1	13·4	228·2	395·9	40·3	436·2
Total, airmen	**7,524**	**6·6**	**75·5**	**50·0**	**79·1**	**27·6**	**16·5**	**36·9**	**213·2**	**505·4**	**84·8**	**590·2**
Total, officers	**950**	**15·8**	**64·2**	**46·3**	**70·5**	**8·4**	**14·7**	**62·1**	**237·9**	**520·0**	**101·1**	**621·1**
Total, abroad	**8,474**	**7·7**	**74·2**	**49·6**	**78·1**	**25·5**	**16·3**	**39·8**	**216·0**	**507·1**	**86·6**	**593·7**

*** Not calculated.**

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Table XVI.—Sickness, excluding Injury, at Principal Stations in Commands Abroad.

Station.	Average strength	Number of cases.						Percentage of total number of cases of disease at stations.					Case incidence per 1,000 of strength.		
		Dysentery.	Malaria.	Sandfly fever.	Total: dysentery, malaria and sandfly fever.	All other diseases.	Total all diseases.	Dysentery.	Malaria.	Sandfly fever.	Total: dysentery, malaria and sandfly fever.	All other diseases.	Dysentery, malaria and sandfly fever.	All other diseases.	All diseases.
Egypt.															
Aboukir ..	763	—	6	8	14	203	217	—	2·8	3·7	6·5	93·5	18·3	266·1	284·4
Abu Sueir ..	453	—	15	10	25	99	124	—	12·1	8·1	20·2	79·8	55·2	218·5	273·7
Cairo	565	1	10	2	13	235	248	0·4	4·0	0·8	5·2	94·8	23·0	415·9	438·9
Iraq.															
Hinaidi ..	1,625	18	26	114	158	742	900	2·0	2·9	12·7	17·6	82·4	97·2	456·6	553·8
India.															
Karachi ..	723	6	53	4	63	204	267	2·2	19·9	1·5	23·6	76·4	87·1	282·2	369·3
Mediterranean.															
Malta	351	1	1	16	18	80	98	1·0	1·0	16·3	18·3	81·7	51·3	227·9	279·2

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TABLE XVII.—DYSENTERY, MALARIA AND SANDFLY FEVER AT STATIONS ABROAD.

Station.	Average strength.	No. of cases.										
		Dysentery.								Malaria.		Sandfly fever.
		Clinical		Bacillary		Protozoal		All types				
		Primary.	All.	Primary.	All.	Primary.	All.	Primary.	All.	Primary.	All.	
Mediterranean Littoral.												
Aboukir ..	763	—	—	—	—	—	—	—	—	3	6	8
Abu Sueir ..	453	—	—	—	—	—	—	—	—	12	15	10
Aden ..	378	2	2	3	3	—	—	5	5	7	7	1
Amman ..	257	—	—	—	—	1	1	1	1	2	8	30
Cairo and Heliopolis	565	—	—	—	—	1	1	1	1	7	10	2
Helouan ..	151	2	2	2	2	—	—	4	4	5	7	7
Khartoum ..	174	—	—	1	1	—	—	1	1	6	6	18
Malta ..	351	—	1	—	—	—	—	—	1	—	1	16
Ramleh ..	148	—	—	—	—	2	2	2	2	18	21	11
Various small stations and drafts *en route* ..	334	—	—	—	—	—	—	—	—	14	22	10
Total ..	3,574	4	5	6	6	4	4	14	15	74	103	113
India.												
Ambala ..	135	—	—	—	—	—	—	—	—	4	5	7
Karachi ..	723	—	—	4	4	—	2	4	6	23	53	4
Kohat ..	203	—	—	4	4	1	1	5	5	57	111	47
Lahore ..	149	—	—	—	—	—	—	—	—	22	35	5
Lower Topa..	119	—	—	—	—	—	—	—	—	17	19	4
Peshawar ..	150	—	—	4	4	—	—	4	4	27	50	25
Quetta ..	330	—	—	1	1	1	1	2	2	28	45	21
Risalpur ..	227	—	—	1	1	—	—	1	1	43	52	19
Various small stations ..	65	1	1	1	1	—	—	2	2	10	18	5
Total ..	2,101	1	1	15	15	2	4	18	20	231	388	117
Iraq.												
Basrah ..	232	—	—	—	—	5	6	5	6	78	100	32
Hinaidi ..	1,625	—	—	7	7	10	11	17	18	16	26	114
Mosul ..	235	—	—	—	—	2	2	2	2	3	3	33
Shaibah ..	181	—	—	—	—	3	3	3	3	5	5	10
Total ..	2,273	—	—	7	7	20	22	27	29	102	134	189
Fleet Air Arm abroad ..	441	—	—	—	—	—	—	—	—	2	3	1
Far East ..	85	—	—	—	—	1	1	1	1	1	1	—
TOTAL all units abroad ..	8,474	5	6	28	28	27	31	60	65	410	629	420

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Chart II. Sickness Abroad, 1929.

Monthly Case Incidence per 1,000 of Strength.

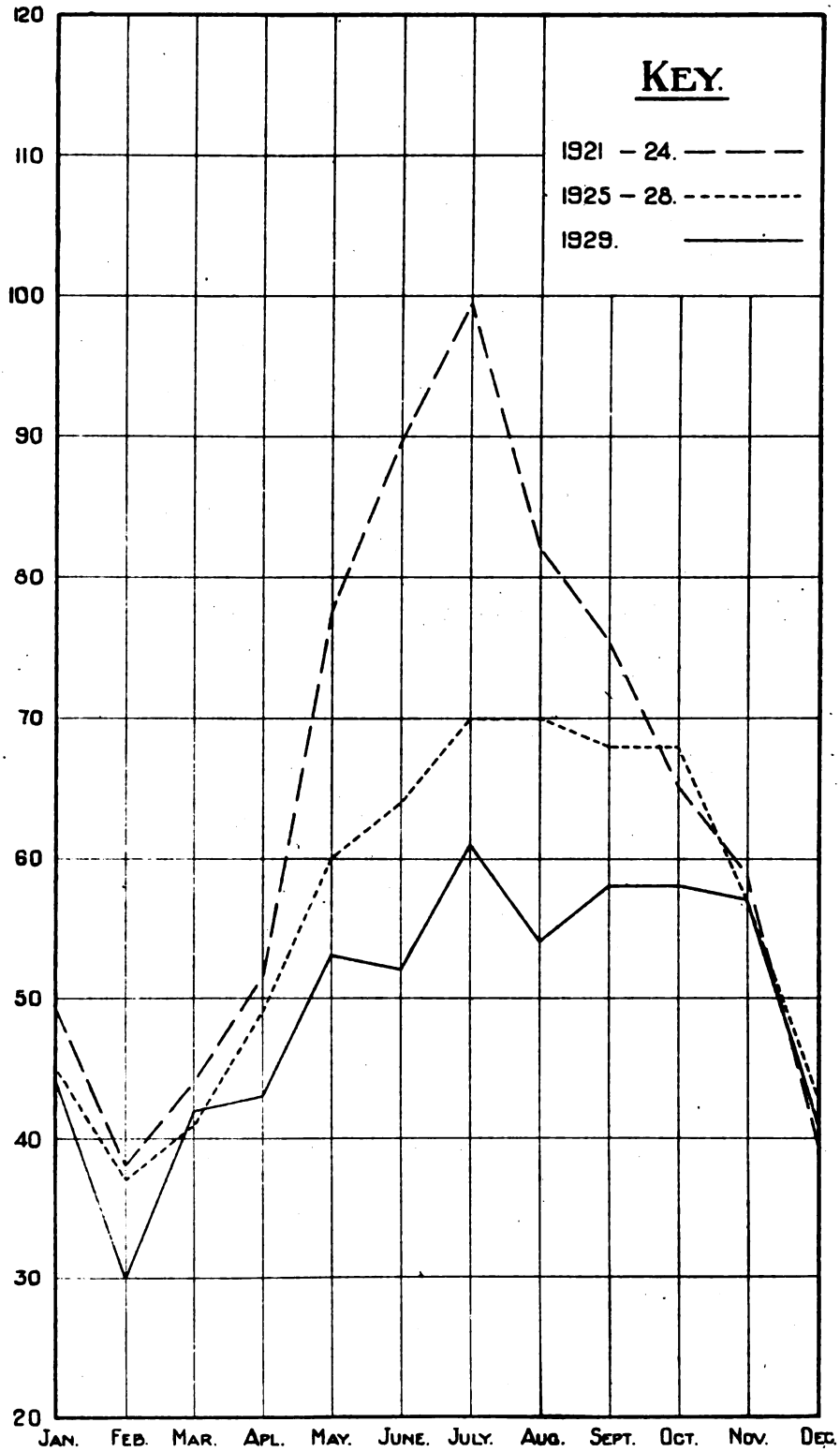

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Table XVIII.—Dysentery, Malaria, and Sandfly Fever Abroad—Monthly Case Incidence.

Month.	Dysentery.						Malaria.						Sandfly fever.		
	Mediterranean Littoral.		India.		Iraq.		Mediterranean Littoral.		India.		Iraq.		Mediterranean Littoral.	India.	Iraq.
	Primary cases.	All cases.	Primary cases.	All cases.	Primary cases.	All cases.	Primary cases.	All cases.	Primary cases.	All cases.	Primary cases.	All cases.			
January	—	—	—	—	1	1	4	6	3	14	1	1	3	—	—
February	—	—	—	—	1	1	—	1	—	7	1	1	—	—	2
March	1	1	—	—	1	1	—	1	2	8	—	—	—	1	—
April	1	1	4	4	1	1	1	1	1	7	1	2	5	6	8
May	6	6	2	2	4	4	2	5	9	18	11	14	16	14	41
June	—	1	2	2	2	3	1	2	4	12	16	18	17	16	18
July	4	4	2	2	4	4	4	8	13	18	24	27	9	28	34
August	—	—	3	4	2	3	6	10	26	37	7	14	21	20	36
September ..	1	1	3	4	2	2	18	19	41	67	10	13	29	16	32
October	1	1	—	—	1	1	21	28	72	105	7	11	10	8	12
November	—	—	2	2	5	5	13	18	48	74	16	24	1	8	6
December	—	—	—	—	3	3	4	4	12	21	8	9	2	—	—
1929 Total ..	14	15	18	20	27	29	74	103	231	388	102	134	113	117	189
Case incidence per 1,000 of strength															
1929	3·9	4·2	8·6	9·5	11·9	12·8	20·7	28·8	110·0	184·7	44·9	59·0	31·6	55·7	83·2
1925–1928 ..	*6·0*	*7·3*	*10·6*	*12·7*	*24·3*	*27·8*	*22·3*	*49·3*	*109·8*	*249·7*	*47·7*	*106·7*	*32·1*	*50·4*	*140·0*
1921–1924 ..	*11·0*	*13·8*	*12·6*	*22·7*	*30·1*	*37·9*	*10·6*	*25·5*	*107·8*	*240·9*	*55·9*	*121·3*	*72·8*	*70·4*	*297·0*

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CHAPTER IV.—MISCELLANEOUS.

The Central Medical Establishment.

66. Eight hundred and forty-five candidates for commissions in the general duties branch were examined during 1929, of whom 494, or 58 per cent., were finally accepted, compared with 64 per cent. in 1928. Two hundred and sixty-nine were finally rejected and 82 were shown as temporarily unfit at the end of the year but due for re-examination in 1930.

67. The classification and percentage of candidates accepted are shown in table XIX. The causes of rejection, both finally and temporarily, at examinations of all types of candidates, including those for the general duties branch, are shown in table XXI. Defective vision, as in previous years, was the most frequent cause of rejection, 31 per cent., compared with 37 per cent. in 1928, and an average of 36 per cent. over the last five years.

68. In table XX the average results of the physical efficiency tests and measurements for all candidates accepted are shown for 1929 and by age groups for the five-year period 1925–1929. It is to be noted that the figures in this table bear out the practical experience of the Central Medical Establishment, that the physical efficiency of male adults does not vary between the ages of sixteen and 28.

69. During the year short courses of instruction in the routine procedure of medical examination in the Royal Air Force were given to—

4 medical officers from the Royal Navy.
1 officer from the Royal Canadian Army Medical Service.
1 officer from the South African Medical Corps.
1 medical officer from the Chilean Navy.

In addition, twelve newly-joined medical officers attended from the Medical Training Depôt for instruction in the principles of board procedure. Day visits were also paid by several medical officers from foreign states who were interested in the British methods of examination.

70. Investigation into the effects of fast flying and intensive aerobatics was completed during the year, including a special medical overhaul of the pilots associated with the High Speed Flight and the Schneider Trophy Race. The results showed that no special methods beyond the ordinary routine examination were required in the selection of R.A.F. personnel for high-speed flying, and that the rotation test employed at the Central Medical

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Establishment to ascertain suitability for aerobatics was as proficient in its indications as was the especially built whirling arm designed for this purpose. The technique of the routine rotation test was given in the Report of the Health of the Royal Air Force for 1924.

71. It was found also that medical examinations during the period of training for high-speed flying were unnecessary, but that it is important that the training should be under medical supervision. The chief effect of steep banking at high speed, "blacking-out," appears to be due to withdrawal of blood from the eye itself, a condition which, however, beyond affecting vision, does not incapacitate the individual to a degree which renders management of the aircraft impossible. The dimming, or "blacking-out," however, should be regarded by pilots as a warning not to increase these effects by turning further. Investigation is still required as to the best position for the pilot in the aircraft to combat such effects, aided by a good supply of fresh air upon the face, or by the administration of oxygen.

72. The electrocardiograph and orthodiagraph have been proved to be valuable accessories in the assessment of cardio-vascular efficiency, and a large amount of interesting data has been accumulated concerning the nature of the variations of the normal electrocardiogram and the relative size of the heart associated with physical efficiency.

73. The investigations into the ventilation of civilian aircraft were continued by flights in various types of aircraft, and suggestions have been put forward for the more efficient ventilation of cabins, which, it is believed, will aid in the prevention of air-sickness.

Physical Efficiency of Serving Officers and Airman Pilots of the Royal Air Force.

74. Three thousand six hundred and thirty-six officers and airman pilots were subjected to the standard physical efficiency tests at the annual medical examination for 1929. Two thousand two hundred and fifty officers of the general duties branch liable to full flying duties were examined, and of these 2,010 (89 per cent.) were found to be fit for the full duties of their branch: the results of the standard tests on these officers classified as fit are analysed in tables XXIII and XXIV. Three hundred and fifteen out of 325 airman pilots (97 per cent.) were graded as fit for full flying duties, and the results of the standard tests are shown in tables XXIII and XXIV. Of three hundred and forty-one officers of the general duties branch who, for reasons of age or rank, were not liable for full flying duties, 154 were categorised as fit for full flying duties, 151 at home or abroad and three at home only, and 686 out of 720 officers of the ancillary services were considered to be fit for the full duties of their respective branches.

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75. The causes of unfitness among the 240 officers of the general duties branch liable for full flying duties are shown in table XXV. It should be noted that the number shown as unfit includes many officers who were only temporarily unfit at the date of examination, and that many of these were fit for limited flying duties. In 1929 the most frequent cause of unfitness was medical 87, followed by surgical 70, and defective vision 56; in 1928 the corresponding figures were surgical 75, medical 70, and defective vision 66. In 1926 and 1927 the commonest cause of unfitness was medical, with defective vision—which was the most frequent cause in 1925—occupying second and third places respectively.

76. The object of table XXIII is to correlate the final assessment with the results of the separate tests, and of table XXIV to compare the results of the standard tests by age groups. With the exception of the time taken to return to normal by the pulse after exercise, the officer pilots show a slightly better figure than the airman pilots. The best breath-holding test and fatigue test were made by the officer group under 25 years, and the best expiratory force test by the officer group 31 years and over.

Medical examination of recruits.

77. The total number of candidates for enlistment examined during 1929 was 7,393 compared with 5,958 in 1928. Two thousand nine hundred and ninety-two candidates—40 per cent.—were passed as medically fit, compared with 1,868, or 53 per cent. in 1928. In addition, 1,193 apprentices were attested during 1929, making, with the finally attested recruits out of the 2,992 found medically fit, a total intake of 3,314.

78. Table XXVI analyses the numbers rejected on medical grounds by cause and place of examination, and shows in addition the rate per thousand of each cause of rejection. Candidates are examined at the London Recruiting Depôt either as direct applicants or referred to that depôt by civilian medical practitioners in the provinces who have carried out a preliminary examination and consider that the applicant is suitable for a final examination at the main recruiting depôt. A few applicants are examined at R.A.F. stations and are accepted or rejected without reference to the London Recruiting Depôt, and aircraft apprentices are entered from Ruislip or Halton.

Hygiene.

79. *Accommodation.*—At established home stations the remaining war-time structures are being steadily replaced by permanent buildings embodying modern ideas and improvements, and this new accommodation provides quarters of a very high standard both as regards comfort and hygiene. Similar works are in progress at many of the stations abroad.

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80. When the "lay-outs" of new stations are under consideration, the greatest care is taken in siting to preserve as far as possible the amenities of the country-side and to place quarters in positions where they are correctly orientated for light and prevailing winds without disturbing existing trees and vegetation more than is absolutely necessary.

81. A new type design for sick quarters at two-squadron stations has been adopted. The special points aimed at were the provision of a building which could serve efficiently as a small hospital for medical and surgical cases and at the same time be worked by the very limited staff available for this purpose and the general medical duties of the units. The ground-plan appears opposite page 64. The officers', airmen's and observation wards, accident reception room (operating theatre), and orderlies' room all open out from an octagonal hall, this section representing the in-patients' department. The medical inspection room, dental surgeon's department and office are reached by an independent entrance, and are separated from the hospital section by the medical officer's consulting room and the kitchen premises. Central-heating has been installed throughout.

82. A summer rest camp has been established at Mirgamir in Kurdistan, 7,000 feet above sea-level. This is reached in a two-days' trek from Diana, about twelve hours' marching in all with a night's rest north of Sideka bridge. The site is on a flat plain, set among snow-capped hills with an intersecting stream and ample accommodation for games.

83. The Aircraft Depôt at Karachi is the first station to be mosquito-proofed and the work is now practically completed.

84. *Water.*—The customary routine and special analyses of water have been made at all stations. In some cases the exceptional drought caused a lowering of the usual standard of purity and chlorination had to be resorted to temporarily.

85. At Aden, until this year, the only water in regular use for drinking purposes has been condensed water from the government condensers. Now another source of supply is available, namely, the water from the bore wells at Sheikh Othman. Its importance merits a brief description of the nature of the supply and its manner of distribution.

86. About forty or fifty miles from Aden, a range of high hills runs parallel with the coast, and through the range several streams emerge. The beds of these streams and their branches can be traced right down to the sea and are usually dry for twenty or thirty miles from the coast. This is due to the fact that on reaching the plain the water passes into the soil and makes its way by gravel layers between the clay strata to the sea. By sinking wells anywhere in the bed or dried up wadi of these

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streams, experts believed that a good supply of water could be obtained. As early as 1924, drilling operations were started in the neighbourhood of Sheikh Othman in the course of the Wadi Tabana. At first, results were not encouraging and the work was held up from time to time. However, during the last two years good progress has been made with the result that there are now six bore wells within a radius of 500 yards, all capable of giving a good supply of water for drinking purposes. The two gravel strata from which this water is obtained are found at depths of 140 feet and 204 feet respectively. The latter gives the better supply and bore wells Nos. 2 to 6 are sunk to this depth. In sinking No. 1 bore well neither of these strata was detected, or if detected, was considered satisfactory, so boring operations were continued to 1,700 feet. Here an artesian supply was tapped, which gives a good supply of water, coming up under pressure and at a temperature of 140° F.

87. The water is bacteriologically pure. It is characterized by a high degree of hardness and high saline content, but whilst these are defects of some importance they are not sufficient to condemn the water for drinking purposes. The high degree of hardness will prevent its use in motor transport or aeroplanes, but for this purpose a supply of condensed water will still be available.

88. The water for drinking purposes is supplied by bore wells Nos. 1 and 2. The water from these is mixed in a ground reservoir and pumped from there to a gravity reservoir. From here a six-inch pipe line conveys the water supply along the stone channel of the old aqueduct water supply to Obstruction Pier. The squadron and the other units at Khormaksar draw off their own supply from this pipe line as it passes through. The pipe line ends at present at Obstruction Pier and from there it is conveyed to Post Office Pier by water barge. The barge pumps it from here to storage reservoirs situated a short distance from the pier. From this point it is distributed to the various units by camel carts. These carts consist of a metal barrel-shaped tank with a large opening at the top through which the cart is filled and a brass tap by which the water can be drawn off. The carts are cleaned every day with a strong solution of liquor ammon. fort. and bleaching powder and rinsed out with clean condensed water. The water barge is similarly treated. A R.A.F. sanitary corporal is specially trained and detailed for this duty.

89. This bore well water can now be supplied at a cost of four annas for 100 gallons, whereas the condensed water costs about eight times this sum. The provision of a cheap and satisfactory water supply for drinking, ablution and other purposes will alter the whole situation with regard to the water supply and will solve many of the present difficulties.

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90. It should now be possible to instal a series of water-borne sewage systems discharging into the sea, that would take the place of the present system of conservancy which is antiquated and bad. Also, it should be possible to instal a pipe line system that would deliver water for drinking and other purposes direct to the various units. The present manner of distribution of water for drinking purposes by camel carts and its necessary man-handling by filthy camel drivers is a system that cannot be too strongly condemned, for however pure a water is in the distributing reservoirs and however strict the supervision of its distribution, it is always liable to contamination *en route*. A drinking water distributed under such conditions can never be regarded as absolutely safe.

Hygiene Section, R.A.F. Depôt.

91. Fourteen full-size models were added to the museum during the year, and the total number of models, both full-size and miniature, is now 101.

92. Forty-seven hospital orderlies under training attended the course of lectures and demonstrations, and eleven out of twelve nursing orderlies completed their course of training for remustering to sanitary orderly. Two hundred and fifty-two officers, due for promotion examinations or new entrants on short service commissions, were given instruction in the methods of camp sanitation and water purification, and 1,384 airmen attended at the depôt for lectures and demonstrations during the year.

Princess Mary's Royal Air Force Nursing Service.

93. The health of this branch of the Royal Air Force was good during 1929, and compared favourably with earlier years. The average strength of the branch was 95, and 32 members—26 at home and six abroad—were admitted to hospital, representing 748 days sickness, or an average of 7·8 days per member compared with 6·6 in 1928 and 9·6 in 1927; the number of sick daily rose slightly from 1·8 in 1928 to 2·0 in 1929. There were no deaths in 1929; two members were invalided from abroad and one finally from the service.

Transfer of Casualties by Air.

94. In Iraq, 55 patients were evacuated over a total distance of 6,518 miles in 23 trips, of which ten were specially requisitioned, and thirteen were routine communication trips. In Palestine, ten patients were flown 600 miles in nine trips, for seven of which aircraft were employed specially for the evacuation and in two of which the medical authorities availed themselves of routine communication flights. One emergency case at home was flown 53 miles from the station to hospital.

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Royal Air Force Reserve of Officers.

95. One hundred and thirty-nine candidates for the Reserve of Officers were examined at the Central Medical Establishment during 1929, of whom 94 were accepted—68 per cent., compared with 72 per cent. in 1928 and 56 per cent. in 1927. The causes of rejection in this class of candidate are shown in table XXI.

96. As many officers of the reserve as possible were examined as to their physical fitness during the year on similar lines and in accordance with the same standards as obtain for regular officers. In all, it was only found possible to examine 128 out of 651 officers who were actually under training during the year, exclusive of members of the university squadrons who are examined at R.A.F. stations. Estimating the standard of fitness of these 128 officers by the efficiency index in use at the Central Medical Establishment, 68 per cent. were assessed as above average, ten per cent. as average and 22 per cent. below average in the 40 millimetre test, while in the eye tests 62 per cent. were marked very good, 27 per cent. good, five per cent. fair, and six per cent. poor.

97. During the periods of annual training the Reserve of Officers showed a good state of health. Sixteen cases of sickness out of a total strength of 651 occurred during training, representing 98 days sickness, or 0·2 days sickness per head, compared with 0·4 days in 1928. The incidence per 1,000 of strength fell from 42·6 in 1928 to 24·6 in 1929. In flying accidents during training, there were five casualties which were admitted to hospital, two of which proved fatal. The corresponding figures for 1928 were six casualties and no deaths.

Dental Treatment.

98. A summary of the dental work carried out by R.A.F. dental surgeons is contained in table XXVII, page 64. Excluded from this summary are personnel serving in India and Malta who receive treatment from Army dental surgeons, and 1,035 cases which were treated by civilian dental practitioners. The amount of dental treatment afforded during the year by the civilian surgeons averaged 1·6 fillings and 0·82 extractions per case, 61 cases were supplied with 84 dentures, twelve dentures were repaired, and 22 remodelled.

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TABLE XIX.—RESULTS OF 1,069 EXAMINATIONS AT THE CENTRAL MEDICAL ESTABLISHMENT ON 845 CANDIDATES FOR FLYING DUTIES.

Class of candidate.	Number accepted	Number rejected.		Total.	Percentage accepted.
		Finally	Temporarily.		
Cadets	69	33	14	116	59
Airman pilots	65	29	7	101	64
Short service commissions	319	197	56	572	56
Fleet Air Arm	27	2	4	33	82
Secondments from Army	5	1	1	7	71
Permanent commissions (university nominations)	9	7	—	16	56
Total	494	269	82	845	58

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TABLE XX.—CANDIDATES FOR FLYING DUTIES.

Average physical efficiency tests and measurements recorded at the Central Medical Establishment.

Average results of tests.	Unit of measurement.	All accepted candidates, 1925–29.												1929.
		Ages (numbers in each age group are shown in brackets).												
		16 and 17 (107)	18 (355)	19 (246)	20 (279)	21 (258)	22 (246)	23 (180)	24 (156)	25 (85)	26 and 27 (82)	28 and over (39)	All ages (2033)	All ages (494)
Standing height ..	Cms.	175·3	175·3	175·7	174·5	175·3	175·3	174·9	176·7	174·6	175·5	176·3	175·3	175·6
Weight	Kgs.	62·7	63·1	63·8	63·7	64·9	65·8	64·6	65·6	66·0	66·0	66·6	64·4	65·4
Chest	Cms.	85·6	85·5	85·8	86·0	86·7	87·8	87·3	88·4	88·8	89·8	90·0	86·8	85·7
Vital capacity	Cc.	4,857	4,894	4,889	4,870	4,919	5,011	4,963	4,894	5,006	5,018	4,882	4,921	4,859
Breath-holding ..	Seconds.	82·0	78·1	77·8	79·6	79·7	78·3	80·4	76·8	80·4	76·1	74·8	78·8	76·8
Expiratory force ..	Mm. Hg.	131·8	135·6	136·8	139·7	142·3	141·6	140·8	143·0	146·6	140·3	142·2	139·5	139·1
Fatigue test	Seconds.	67·3	63·4	64·3	64·8	67·4	69·3	69·6	64·7	63·9	64·6	64·4	65·8	68·3
Systolic pressure ..	Mm. Hg.	130·9	128·5	128·8	128·9	129·8	131·5	131·2	131·3	130·3	129·2	131·9	129·9	130·6
Diastolic pressure ..	Mm. Hg.	77·9	78·1	78·2	78·8	79·1	79·3	79·3	80·3	79·8	80·5	81·4	79·0	78·1
Pulse rate :—														
Sitting	Per min.	73·4	72·0	73·1	72·2	72·1	71·9	71·6	71·1	71·9	72·3	70·8	72·1	73·2
Standing	Per min.	81·1	80·1	81·5	79·6	79·3	79·4	79·6	79·2	80·4	80·0	77·4	79·9	82·9
After exercise ..	Per min.	106·6	105·8	106·3	105·9	104·6	103·8	103·1	103·5	103·0	104·2	98·9	104·8	105·7
Time taken to return to normal.	Seconds.	32·7	29·8	31·3	29·7	29·6	29·4	28·0	30·0	28·5	30·4	30·4	29·9	31·1

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TABLE XXI.—CAUSES OF REJECTION BY THE CENTRAL MEDICAL ESTABLISHMENT.

Class of candidate.	(1) Vision.		(2) Ear, nose, throat and teeth.		(3) Medical and surgical.		(4) Defective physical efficiency.		(5) Combinations of (1), (2), (3), with (4).		Total.	
	Temporarily.	Finally.	Temporarily.	Finally.	Temporarily.	Finally.	Temporarily.	Finally.	Temporarily.	Finally.	Temporarily.	Finally.
Permanent commissions	—	4	2	2	4	19	—	1	—	4	6	30
Short service commissions ..	6	56	3	2	25	41	11	70	11	32	56	201
Cadets	1	15	1	1	9	5	1	5	2	7	14	33
Reserve	1	18	2	1	3	5	4	2	—	9	10	35
Airman pilots ..	—	8	—	4	6	12	—	3	1	2	7	29
Auxiliary Air Force	—	4	—	—	—	2	—	—	1	—	1	6
Fleet Air Arm ..	—	1	—	—	3	1	1	—	—	—	4	2
Casuals	—	3	—	—	1	6	—	2	2	2	3	13
Secondments to R.A.F.	—	—	—	—	—	—	—	—	1	1	1	1
Total ..	8	109	8	10	51	91	17	83	18	57	102	350

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TABLE XXII.—PHYSICAL ASSESSMENT IN RESPECT OF AIR DUTIES OF OFFICERS OF THE GENERAL DUTIES BRANCH LIABLE TO FULL FLYING DUTIES.

——	Year.	Fit, full flying.	Unfit, full flying.	Total.	Percentage fit, full flying.
At home	1929	1,424	201	1,625	88
	1928	*1,330*	*205*	*1,535*	*87*
	1927	*1,308*	*188*	*1,496*	*87*
	1926	*1,375*	*191*	*1,566*	*88*
	1925	*1,401*	*154*	*1,555*	*90*
	1924	*1,384*	*168*	*1,552*	*89*
	1923	*1,330*	*196*	*1,526*	*87*
	1922	*1,181*	*173*	*1,354*	*87*
Abroad	1929	586	39	625	94
	1928	*517*	*48*	*565*	*92*
	1927	*519*	*56*	*575*	*90*
	1926	*593*	*57*	*650*	*91*
	1925	*665*	*52*	*717*	*93*
	1924	*672*	*60*	*732*	*92*
	1923	*616*	*85*	*701*	*88*
	1922	*638*	*104*	*742*	*86*
Total	1929	2,010	240	2,250	89
	1928	*1,847*	*253*	*2,100*	*88*
	1927	*1,827*	*244*	*2,071*	*88*
	1926	*1,968*	*248*	*2,216*	*89*
	1925	*2,066*	*206*	*2,272*	*91*
	1924	*2,056*	*228*	*2,284*	*90*
	1923	*1,946*	*281*	*2,227*	*87*
	1922	*1,819*	*277*	*2,096*	*87*

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Table XXIII.—Results of Further Tests of Officers of the General Duties Branch and Airman Pilots.

Nature of test.	Officers.						Airman pilots, 325.		Total officers and airman pilots, 2,575.	
	Fit for flying duties, 2,010.		Unfit for flying duties, 240.		Total, 2,250.					
	Numbers.	Percentage.	Numbers.	Percentage.	Numbers.	Percentage.	Numbers.	Percentage.	Numbers.	Percentage.
Tremor—absent	836	42	83	35	919	41	120	37	1,039	40
„ present	1,174	58	157	65	1,331	59	205	63	1,536	60
Self-balancing, steady	1,922	96	211	88	2,133	95	319	98	2,452	95
„ „ unsteady	88	4	29	12	117	5	6	2	123	5
Knee jerks—normal	1,805	90	208	87	2,013	89	292	90	2,305	90
„ „ abnormal	205	10	32	13	237	11	33	10	270	10
Vision, 6/6 both eyes	1,916	95	199	83	2,115	94	321	99	2,436	94
„ 6/6 and 6/9; 6/9 and 6/9	71	4	16	7	87	4	4	1	91	4
„ over 6/9 in either eye	23	1	25	10	48	2	—	—	48	2
Nasopharynx—normal	1,952	97	225	94	2,177	97	314	97	2,491	97
„ abnormal	58	3	15	6	73	3	11	3	84	3
Teeth—no treatment required	1,726	86	203	85	1,929	86	281	86	2,210	86
„ treatment required	284	14	37	15	321	14	44	14	365	14
Pyorrhœa—absent	1,998	99	237	99	2,235	99	323	99	2,558	99
„ present	12	1	3	1	15	1	2	1	17	1

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TABLE XXIV.—AVERAGE RESULTS OF TESTS OF 2,010 SERVING OFFICERS OF THE GENERAL DUTIES BRANCH AND 315 AIRMAN PILOTS FIT FOR FLYING DUTIES.

——	Age group.	No. examined.	Age.	Weight.	Time breath held.	Expiratory force.	Fatigue test.	Pulse rate per minute.			Pulse time taken to return to normal.	Systolic pressure.	Pulse pressure.
								Sitting.	Standing.	After-exercise.			
OFFICERS.	Yrs.		Yrs.	Kgs.	Secs.	Mm. Hg.	Secs.				Secs.	Mm. Hg.	Mm. Hg.
At home	Under 25 ..	546	22·0	69·3	80·9	163·3	67·8	71·8	76·4	100·1	22·4	122·9	46·7
	25–30 ..	433	28·2	71·1	80·5	171·0	65·5	71·3	76·3	99·4	22·8	123·9	45·6
	31 and over	445	34·6	71·6	76·0	170·6	64·0	71·4	76·6	98·7	22·4	123·9	44·7
	All ages ..	1,424	27·8	70·5	79·3	168·0	65·9	71·5	76·4	99·5	22·5	123·5	45·7
Abroad	Under 25 ..	191	23·0	68·0	82·8	148·6	63·8	71·5	79·1	100·5	23·9	121·2	44·1
	25–30 ..	248	27·8	69·1	79·7	153·4	65·9	71·8	80·0	99·8	23·0	122·7	44·2
	31 and over	147	34·8	69·2	77·4	159·8	69·2	73·9	80·3	101·4	22·4	123·2	44·1
	All ages ..	586	28·0	68·8	80·2	153·4	66·0	72·2	79·8	100·5	23·1	122·3	44·1
Total force ..	Under 25 ..	737	22·3	69·0	81·4	159·5	66·8	71·7	77·1	100·2	22·8	122·5	46·0
	25–30 ..	681	28·0	70·4	80·2	164·6	65·7	71·5	77·6	99·6	22·8	123·5	45·1
	31 and over	592	34·6	71·0	76·4	167·9	65·3	72·0	77·5	99·4	22·4	123·7	44·5
	All ages ..	2,010	27·9	70·0	79·5	163·7	65·9	71·7	77·4	99·8	22·7	123·2	45·3

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AIRMAN PILOTS.													
At home	Under 25 ..	74	22·7	65·5	79·2	165·1	63·7	72·8	77·2	101·4	22·1	124·5	47·6
	25–30 ..	116	27·5	68·0	76·4	169·4	64·8	73·0	78·6	102·2	22·1	126·6	47·5
	31 and over	11	33·0	65·9	73·6	171·9	63·0	75·3	79·6	105·8	19·5	128·5	46·0
	All ages ..	201	26·0	67·0	77·3	167·9	64·3	73·0	78·1	102·1	22·0	125·9	47·5
Abroad	Under 25 ..	75	23·3	64·3	82·1	151·3	62·2	72·6	80·1	103·6	22·5	125·3	46·1
	25–30 ..	36	26·6	65·2	78·2	154·9	66·3	71·0	76·5	98·7	19·9	125·1	45·5
	31 and over	3	32·8	68·8	68·3	133·3	63·7	72·0	84·0	104·0	20·0	132·0	50·0
	All ages ..	114	24·6	64·7	80·5	152·0	63·5	72·1	79·1	102·1	21·6	125·4	46·0
Total force ..	Under 25 ..	149	23·0	64·9	80·7	158·1	62·9	72·7	78·7	102·5	22·3	124·9	46·9
	25–30 ..	152	27·3	67·3	76·9	165·9	65·1	72·5	78·1	101·3	21·6	126·2	47·0
	31 and over	14	33·0	66·5	72·5	163·6	63·1	74·6	80·6	105·4	19·6	129·2	46·8
	All ages ..	315	25·5	66·2	78·5	162·1	64·0	72·7	78·5	102·1	21·8	125·7	46·9

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TABLE XXV.—REASONS OF UNFITNESS (TEMPORARY OR OTHERWISE) FOR FULL FLYING DUTIES OF 240 OFFICERS OF THE GENERAL DUTIES BRANCH.

Defect.	At home.	Abroad.	Total.
Vision	41	15	56
Ears or teeth	13	1	14
Medical	79	8	87
Surgical	58	12	70
D.P.E.	10	2	12
D.P.E. and vision	—	1	1
	201	39	240

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Table XXVI.—Recruits—Causes of Rejection.

Total examined, 7,393.	Numbers rejected.					
Cause of rejection.	By civilian medical practitioners.	At London Recruiting Depôt.	At R.A.F. stations.	Total number rejected.	Number rejected per 1,000 examined.	Number rejected per 1,000 rejected.
Poor physique	496	157	14	667	90	152
Malformation of chest or spine ..	71	1	2	74	10	17
Impediment of speech	18	7	—	25	3	6
Diseases of nervous system	17	57	—	74	10	17
Defective vision	239	86	5	330	45	75
Diseases of eyes and eyelids ..	6	21	—	27	4	6
Diseases of ear	63	164	3	230	31	52
Diseases of heart	238	185	4	427	58	97
Diseases of veins	52	56	—	108	15	25
Diseases of lungs	16	140	2	158	21	36
Loss or decay of many teeth	932	227	5	1,164	158	264
Hernia and bubonocele	20	32	—	52	7	12
Diseases of urinary organs	9	28	3	40	5	9
Albuminuria	7	24	—	31	4	7
Varicocele	14	19	5	38	5	9
Diseases of joints	3	7	—	10	1	2
Deformities of feet	349	296	3	648	88	147
Ulcers, wounds and cicatrices ..	21	2	—	23	3	5
Diseases of cutaneous system ..	22	70	1	93	13	21
History of bed-wetting	6	18	—	24	3	5
Other causes	38	111	9	158	21	36
Total	2,637	1,708	56	4,401	595	1,000

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TABLE XXVII.—DENTAL TREATMENT.

Command	Average strength.	Number of personnel.			Extractions.	Fillings.		Scalings.	New dentures.		Remodels and repairs.		Dental appliances for injuries to jaw.
		Inspected.	Requiring Treatment.	For whom treatment was completed.		Ordinary.	Root.		No.	No. of personnel supplied.	Remodels.	Repairs.	
United Kingdom ..	22,685	13,611	11,168	9,465	12,875	30,870	391	5,212	353	264	99	28	1
Iraq	2,273	1,763	549	835	557	676	34	186	43	33	26	24	2
Egypt	2,197	1,289	531	860	754	1,468	20	740	33	29	18	28	—
Palestine	483	834	116	110	80	80	—	61	10	9	7	4	—
Aden	378	254	104	132	55	405	2	106	2	1	—	3	—

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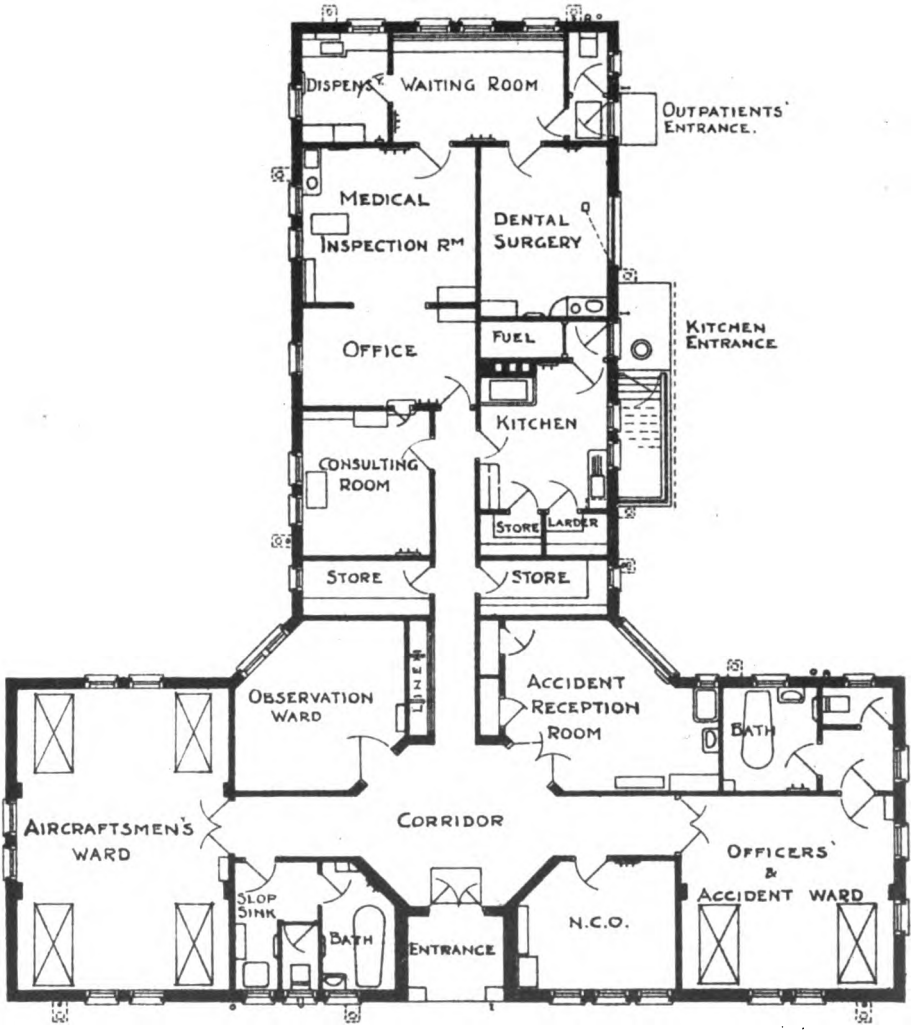
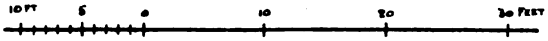


SICK QUARTERS (2 SQDRNS)



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